IN THE SUPREME COURT OF THE STATE OF NEVADA

SANDRA CAMACHO; AND ANTHONY CAMACHO,
Petitioners,
vs.
THE EIGHTH JUDICIAL DISTRICT COURT OF THE STATE OF NEVADA, IN AND FOR THE COUNTY OF CLARK; AND THE HONORABLE NADIA KRALL, DISTRICT JUDGE,
Respondents,
and
PHILIP MORRIS USA, INC., a foreign corporation; R.J. REYNOLDS TOBACCO COMPANY, a foreign corporation, individually, and as successor-by-merger to LORILLARD TOBACCO COMPANY and as successor-in-interest to the United States tobacco business of BROWN & WILLIAMSON TOBACCO CORPORATION, which is the successor-by-merger to THE AMERICAN TOBACCO COMPANY; LIGGETT GROUP, LLC., a foreign corporation; and ASM NATIONWIDE CORPORATION d/b/a SILVERADO SMOKES & CIGARS, a domestic corporation; LV SINGHS NC. d/b/a SMOKES & VAPORS, a domestic corporation,
Real Parties in Interest.

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PETITIONERS' APPENDIX
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DISTRICT COURT

CLARK COUNTY, NEVADA

SANDRA CAMACHO, individually, and ANTHONY CAMACHO, individually, Plaintiffs, v. PHILIP MORRIS USA, INC., a foreign corporation; R.J. REYNOLDS TOBACCO COMPANY, a foreign corporation, individually, and as successor-by-merger to LORILLARD TOBACCO COMPANY and as successor-in-interest to the United States tobacco business of BROWN & WILLIAMSON TOBACCO CORPORATION, which is the successor-by-merger to THE AMERICAN TOBACCO COMPANY; LIGGETT GROUP, LLC., a foreign corporation; and ASM NATIONWIDE CORPORATION d/b/a SILVERADO SMOKES & CIGARS, a	CASE NO.: A-19-807650-C DEPT NO.: IV **PLAINTIFFS' RESPONSE TO DEFENDANT'S MOTION FOR PARTIAL SUMMARY JUDGMENT ON PLAINTIFFS' NEGLIGENCE CLAIMS**

Case Number: A-19-807650-C

domestic corporation; and ROE BUSINESS ENTITIES XI-XX, inclusive,

Defendants.

COME NOW, Plaintiffs, SANDRA CAMACHO and ANTHONY CAMACHO, by and through their counsel of record, CLAGGETT & SYKES LAW FIRM, and respond to Defendant's Motion for Partial Summary Judgment on Plaintiffs' Negligence Claims, as follows:

INTRODUCTION

Defendant's Motion should be denied. Defendant moves for summary judgment on Plaintiffs' claims for strict liability and negligence based on a narrowly selective view of the factual record and expanding legal standards in their favor. The whole record, however, includes fact and expert testimony, which presents genuine issues of material facts better left to the jury.

The record evidence shows Defendant's cigarettes are highly engineered, complex products. The Marlboro and Basic cigarettes smoked by Ms. Camacho are not simply tobacco plucked from the farm, wrapped in paper and sold to consumers. See Exp. Rep. Dr. Robert Proctor at 5-6 (discussing different methods used to alter chemical properties of cigarettes); *id*. (using flue curing process to lower pH of smoke); (manipulation of nicotine controlled within a very tight variance to create and sustain addiction), attached as **Exhibit 1**. Plaintiffs' experts have not merely opined Defendant sold cigarettes despite knowing they were addictive and carcinogenic. Plaintiffs' experts have pointed to intentional, specific design aspects that make Defendant's cigarettes defective and unreasonably dangerous, including the addition of additives to make them easier to inhale and become additive, and manipulation of nicotine through different methods to

create and sustain addiction. Plaintiffs have shown here much more than just the sale of ordinary cigarettes.

Contrary to Defendant's arguments, as explained below, none of Plaintiffs' claims are barred by federal preemption. Furthermore, Plaintiffs has sufficiently presented genuine issues of material fact better left to the jury and thus Defendant's motion should be denied in its entirety.

APPLICABLE STANDARD OF REVIEW

Summary judgment is appropriate only when no genuine issues of material fact exist, and the moving party is entitled to judgment as a matter of law. *Stalk v. Mushkin*, 125 Nev. 21, 24–25 (2009). "A factual dispute is genuine when the evidence is such that a rational trier of fact could return a verdict for the nonmoving party." *Wood v. Safeway*, Inc., 121 Nev. 724, 731, 121 P.3d 1026, 1031 (2005). "The burden of proving the nonexistence of a genuine issue of material fact is on the moving party." *Fergason v. LVMPD*, 131 Nev. 939, 943 (2015). "[T]he evidence must be viewed in the light most favorable to the party against whom summary judgment is sought; the factual allegations, evidence, and all reasonable inferences in favor of that party must be presumed correct." *NGA #2 Ltd. Liability Co. v. Rains*, 113 Nev. 1151, 1157, 946 P.2d 163, 167 (Nev. 1997).

"[W]hen a manufacturer has placed a dangerous or defective product into the stream of commerce, sound public policy requires the imposition of strict liability, even where 'the seller has exercised all reasonable care….'" *Ford Motor Co. v. Trejo*, 133 Nev. Adv. Rep. 68, 402 P.3d 649, 653 (2017) (quoting *Shoshone Coca-Cola Bottling Co. v. Dolinski*, 82 Nev. 439, 441, 420 P.2d 855, 857 (1966)). Strict product liability may arise from design defects, manufacturing defects, or a failure to warn. *Id.*, 402 P.3d at 653; *see*

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also Rivera v. Philip Morris, Inc., 125 Nev. 185, 190-91, 209 P.3d 271, 274 (2009) (failure to warn); *Krause Inc. v. Little,* 117 Nev. 929, 937-38, 34 P.3d 566, 571-72 (2001) (manufacturing defects); *Robinson v. G.G.C., Inc.,* 107 Nev. 135, 138-39, 808 P.2d 522, 524 (1991) (design defects). To succeed on a strict liability claim, a Plaintiffs need only prove: (1) Defendant placed upon the market a defective product; (2) Plaintiffs' injury was caused by the defect in the product; and (3) such defect existed when the product left the hands of the Defendant. *Allison v. Merck & Co., Inc.*, 110 Nev. 762, 767-68, 878 P.2d 948, 952 (1994). Where the evidence is in conflict, the jury is free to decide whether the defect caused the injury." *Dolinski*, 82 Nev. at 443, 420 P.2d at 857-58 (1966); *see also Stackiewicz v. Nissan Motor Corp. in USA*, 100 Nev. 443, 452, 686 P. 2d 925, 930 (1984). (finding that district court improperly granted manufacturer's motion for judgment notwithstanding the verdict because there was circumstantial evidence that could lead the fact-finder to conclude that the car's defect had caused Plaintiffs' injuries). The Supreme Court of Nevada rejects the idea of freeing manufacturers from liability for defective product simply because they claim the product is "reasonably or unavoidably dangerous." *Allison*, 110 Nev. at 774, 878 P.2d at 956.

ARGUMENT

The materials in the record show there are genuine issues of material fact as to the strict liability and negligence claims which are better left to the trier of fact. The expert reports and deposition testimony show the Defendant purposefully designed cigarettes making them defective and unreasonably dangerous.

Defendant's Motion merely rehashes their prior motion to dismiss, again arguing conflict preemption, no defect, and lack of causation. Defendant's arguments fail on preemption because the caselaw and all the various versions of the cigarette labeling

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acts, do not support their position. Likewise, their defect and causation arguments fail because they ignore genuine disputes of material facts in this record. Further, Plaintiffs' claims against Philip Morris are not failure-to-warn claims based on advertising and promotion. So section II(C) of Defendant's Motion is a red herring and entirely moot. Def. Mtn. at 12-14.

On the rest of Defendant's arguments, Plaintiffs has retained some of the foremost and world-renowned qualified experts on tobacco who have rendered opinions creating questions of fact sufficient to controvert Defendant's arguments. Plaintiffs' expert witnesses include Dr. Judith Prochaska, who is the Deputy Director and a tenured Professor of Medicine with the Stanford Prevention Research Center at Stanford University. She wrote in her report that "The tobacco industry has intentionally designed cigarettes with enough nicotine to create and sustain addiction and has controlled the impact and delivery of nicotine in many ways," and that Sandra Camacho's nicotine addiction "contributes substantially to causing an individual to persist in smoking…[which] causes cancer." Ex. Rep. Prochaska at 4 & 66, attached as **Exhibit 4**. Another expert, Dr. Robert Proctor, Ph.D., is a tenured professor of the history of science and professor, by courtesy, of pulmonary and critical care medicine at Stanford University who opines that Defendant's intentional efforts to make cigarettes inhalable, addictive, and combustible renders them defective and unreasonably dangerous. Ex. Rep. Proctor at 4. Plaintiffs also disclosed Dr. Louis Kyriakoudes, Ph.D., a tenured professor of history at Middle Tennessee State University who has been recognized as an expert in state and federal courts of the United States, to provide opinions on public knowledge and perception over time of the health dangers of cigarette

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smoking. See Ex. Rep. Kyriakoudes, attached as **Exhibit 2**. Plaintiffs' medical causation expert, Dr. John Ruckdeschel, who most recently served as the Director of the University of Mississippi Cancer Institute, the Ergon Chair in Cancer Research, and now serves as the Chief Medical Officer of two tech firms, wrote that all the cigarettes Ms. Camacho smoked, including Philip Morris' products, contributed to the development of her cancer. Ex. Rep. Ruckdeschel at 5, attached as **Exhibit 3**.

Thus, the materials in the record, as explained in further detail below, requires the Court to deny Defendant's Motion.

A. Defendant's Marlboro and Basic cigarettes are defective and dangerous beyond an ordinary consumer's expectation

Nevada uses the consumer-expectation test to determine whether a product is defective. *Trejo*, 133 Nev. at 521, 402 P.3d at 650 (citing *Ginnis v. Mapes Hotel Corp.*, 86 Nev. 408, 413, 470 P.2d 135, 138 (1970)). Under this test, a product is defective if "it fail[s] to perform in the manner reasonably to be expected in light of its nature and intended function and [is] more dangerous than would be contemplated by the ordinary user having the ordinary knowledge available in the community." *Id.* "[T]he consumer-expectation test focuses on the reasonable expectations of a consumer regarding the use and performance of a product." *Id.* at 656. Under the consumer-expectation test, proof of a specific defect is not necessary, and "proof of an unexpected, dangerous malfunction may suffice to establish a prima facie case for the Plaintiffs of the existence of a product defect." *Stackiewicz v. Nissan Motor Corp. in USA*, 100 Nev. 443, 448-49, 686 P. 2d 925, 928 (1984). Nevertheless, the materials in the record identify specific defects in Defendant's cigarettes.

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Defendant makes the demonstrably false claim that Plaintiffs fails to create a genuine dispute as to the specific defect in Marlboro and Basic brand cigarettes which caused Ms. Camacho's injury. To start, Plaintiffs' amended complaint is replete with concrete, specific examples of defects contained in these cigarettes which Ms. Camacho smoked, which led to her addiction and ultimately her development of lung cancer and death. See Pl. Am. Com, attached as **Exhibit 10**. And the materials in the record illustrate the defective and unreasonably dangerous nature of these cigarettes:

> The three principal defects are inhalability, which causes lung disease, nicotine maintenance, which causes addiction, and combustion, which causes needlessly high levels of harmful chemicals in smoke. Cigarettes have been deliberately designed to preserve such defects, even though it would be easy to cure and avoid them.

Ex. Rep. Proctor at 4.

<u>Inhalation</u>

The modern cigarette was made inhalable by the tobacco manufacturers. At the turn of the 19th century, the medical literature had reported on only about 140 cases of lung cancer worldwide. See *id* at 21. The fatal flaw in the modern cigarette manufacturing process was flue curing. *Id* at 6. The flue curing process by which tobacco plants are heated after harvest lowers the pH (acid-base balance) which traps the native sugars in the leaf and "plays a crucial role in determining both the principal route of exposure (i.e., inhalation) and the extent of addiction (sugars when burned yield acetaldehydes that create a dopamine synergy with nicotine in the brain)." *Id.* Dr.

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Proctor explained how the process of enhancing the sugars to create inhalability ultimately leads to lung cancer and other diseases:

> Sugars are important, because when you burn sugars you produce organic acids (malic, citric, etc.) that neutralize the resulting smoke, causing it to be much less harsh, less alkaline. The contrast with pipe and cigar tobaccos is significant: alkaline smoke of the sort generated by pipe tobacco and cigars is not inhalable; the smoke is too harsh. Smokers of traditional 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. Cigarette smoke is significantly milder, and therefore easier to inhale than other forms of tobacco. Which is why cigarettes cause lung cancer and other maladies of the lungs.**

Id at 7 (emphasis added); *see also* Exp. Rep. Dr. Kyriakoudes at 92 ("Indeed, cigarette manufacturers designed their products to be more easily inhaled through design factors, largely through the addition of sugars, menthol, and other additives that improved inhaleability of the smoke into the lungs and enhanced the delivery of nicotine").

There is no requirement that a cigarette be inhalable. Defendant's intentionally design their cigarettes to be inhalable:

> **Q Do the tobacco companies purposely design their cigarettes to be inhalable?**
> **THE WITNESS: Yes, they do.**
> BY MR. REYES:
> **Q Is there any law or statute that you are aware of that forces the defendants in this case to design their cigarettes to be inhalable?**
> **THE WITNESS: No. That is a choice.**

Dep. Louis M. Kyriakoudes, Ph.D., in *Geist v. Philip Morris USA, Inc., et al,* Case No.: A-19-807653-C, at 272:15-24 [emphasis added] (objections omitted), attached as **Exhibit 6**. In fact, a cigarette is defined by federal statute merely as "any roll of tobacco wrapped in paper or in any substance not containing tobacco." 15 U.S.C.

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§ 1332 (1)(A); Dep. Kyriakoudes at 273:17-23. Defendant chose to make cigarettes inhalable for one purpose only, to introduce cigarette smoke into the lungs and promote nicotine addiction:

> Q Based on your review of the historical documents and the internal secret tobacco documents, why do the defendants in this case design their cigarettes to be inhalable? What's the main purpose?
> THE WITNESS: To promote addiction to nicotine.

Dep. Kyriakoudes at 273:25-274:5 (objections omitted).

Further, there are materials in the record showing safer alternative designs are available. *Trejo*, 133 Nev. at 525–26, 402 P.3d at 653–54 ("[a]lternative design is one factor for the jury to consider when evaluating whether a product is unreasonably dangerous."); *Fyssakis v. Knight Equip. Corp.*, 108 Nev. 212, 214, 826 P.2d 570, 572 (1992) (evidence of that a "safer alternative design was feasible at the time of manufacture will support a strict liabilities claim."). For example, "[m]ost of the tobacco smoked prior to the twentieth century was not flue cured but rather air cured, which when burned produces a non-inhalable smoke." Exp. Rep. Dr. Proctor at 7. Further,

> It is easy to make cigarettes that are not inhalable, and will not create or sustain addiction. Cigarettes that deliver smoke with a pH greater than 8 will generally not be inhalable—and will not cause lung disease.

Id. at 8. The tobacco industry has considered non-inhalable cigarettes as far back as the 1970s. *Id*. at 8-10. A non-inhalable cigarette can be made by using low sugar tobacco leaf blends. See Dep. Proctor in *Tully v. Philip Morris USA, Inc., et al,* Case No.: A-19-807657-C, at 59:13-17.

Addiction

The other principal defect is addiction. Cigarettes that do not sustain addiction are eminently feasible and have been for decades. *See* Exp. Rep. of Dr. Proctor at 13. The

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addiction defect cannot be defined as "inherent" to cigarettes. *Id*. "That would be like saying that the purpose of a cigarette is to create and sustain addiction—which violates common sense. Smokers do not smoke in order to become addicted—**the reality is that nearly all come to regret having started (once they become addicted.)"** *Id* [emphasis added].

Internal tobacco records discuss the importance of the addictive qualities in Defendant's cigarettes. Dr. Proctor highlights some of these internal records in his expert report:

> Recall the "Forwarding Memorandum" from 1953, where one of the leading industry researchers gave this assessment: "**Fortunately for us, cigarettes are a habit they can't break.**" Or as Claude E. Teague, Jr., at Reynolds put it in 1973: "**Happily for the tobacco industry, nicotine is both habituating and unique in its variety of physiological actions.**"

Id (emphasis added). Not only has addiction been the key defect to sustaining industry profits, but the industry has still never admitted addiction to nicotine delivered through combustible cigarettes causes disease, harm, the compulsive use of cigarettes, or "that addiction is itself a disease and an injury caused by their product." Dep. Kyriakoudes at 256:10 – 20.

"Prolonged tobacco use results in physiologic dependence," Exp. Rep. Dr. Prochaska at 6. The addiction defect ultimately promotes compulsive use of cigarettes, leading to users who smoke upwards of a pack or more of cigarettes each day, which ultimately leads to more cigarette sales. Dep. Kyriakoudes at 274:17-24. Defendants purposely design their cigarettes with just enough nicotine to create and sustain addiction. *Id*. at 274:7-15. The defects of inhalation and addiction were conscious decisions by the manufacturers. "Cigarettes don't have to be inhaled, and they don't have

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to be addictive; these are the result of design decisions made by the manufacturers." Exp. Rep. Dr. Proctor at 12.

Again, there is material in the record showing safer alternative designs exists. Cigarettes can be produced with substantially reduced nicotine that will not create or sustain addiction. Exp. Rep. Dr. Proctor at 11. Philip Morris, for example, had the technology to make a "tasty low nicotine product" as of 1963. Exp. Rep. Dr. Kyriakoudes at 91. The industry has had the ability to even create nicotine free tobacco, which could lead to non-addictive cigarettes. *Id.* at 91. For example, Philip Morris created Benson and Hedges De-Nic, and Merit De-Nic, and Next De-Nic brands, none of which had sufficient nicotine to create or sustain addiction. Exp. Rep. Dr. Proctor at 11.

Combustion

The other major defect is combustion. Dep. Proctor in *Tully v. Philip Morris USA, Inc., et al,* Case No.: A-19-807657-C, at 161:21-162:7, attached as **Exhibit 5**. Unnecessarily high levels of harmful chemicals in smoke are caused by combustion. Exp. Rep. Dr. Proctor at 4. "Cigarettes have been deliberately designed to preserve such defects, even though it would be easy to cure and avoid them." *Id.* Defendants likewise developed safer alternative designs that avoided the combustion defect. For example, Reynolds developed Premier and Eclipse cigarettes, which relied on "heat-not-burn" technology that was developed in the 1960s which lessened the combustion defect in cigarettes. Exp. Rep. Proctor at 84. Dr. Kyriakoudes testified the future of tobacco industry lies in non-combustible alternatives:

> Today the noncombustible nicotine-delivery product category is a large category. Cigarette manufacturers have explicitly identified this as the future of the industry. In fact Philip Morris International has run a series of advocacy full-page ads in the Wall Street Journal over the last few years

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> talking about a smoke-free future or "unsmoke our future," which is the language they use. Now, these are different products. I'm not going to offer a medical opinion about the products, but they don't rely on combustion technology. We find earlier in the historical record, with the British American Tobacco Company in the 1960s with Project Ariel and with the rollout of the Premier cigarette in the late 1980s, '89, that these types of products do exist in the historical record and, as I've testified many times and I give some examples, the industry painted itself into a corner with a reduced-harm product that could not honestly explain to the public how it was a reduced-harm product because they didn't admit that their regular products were deadly.

Dep. Dr. Kyriakoudes, 30:25 - 31:20.

Thus, it is the repeated exposure, due to the inhalable and addictive nature of cigarettes that leads to a variety of life threatening diseases due to the combustion of cigarettes, including lung cancer.

Consumer Expectations Regarding the Unreasonably Dangerous and Defective Nature of Cigarettes

Furthermore, there is a genuine dispute over what the consumer expectations were during the time period Ms. Camacho smoked Philip Morris cigarettes. Whether the defective nature of Defendant's cigarettes common knowledge is a question of fact. For example, in *Rivera v. Philip Morris, Inc.,* 395 F.3d 1142, 1151 (9th Cir. 2005) the 9th Circuit applied Nevada law and concluded that, "such an inquiry [regarding the health risks associated with smoking] is a question of fact to be decided by a jury." Further, *Rivera* holds, "it is at least premature on this record to take judicial notice of the fact that the link between smoking and specific illnesses allegedly caused by smoking was common knowledge during the relevant time." *Id.*

Similarly, other courts like the United States District Court for Arizona declined to exercise judicial notice as to when the risks associated with smoking became common

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knowledge. *Hearn v. R.J. Reynolds Tobacco Company,* 279 F. Supp. 2d 1096, 1108 (U.S. Dist. Ct. Arizona 2003) ("This Court will also decline at this time to exercise judicial notice which would require selection of an arbitrary date for when the risks (i.e. lung cancer) associated with smoking became common knowledge. "[T]he simple fact that courts disagree about [the appropriate date] further illustrates ... this fact is subject to considerable dispute, such that taking judicial notice of it would be improper.").

Further, Plaintiffs' experts provided ample details regarding consumers' expectations—or lack of knowledge—regarding the unreasonable dangerousness of Defendant's cigarettes. Dr. Proctor is expected to testify "most people don't realize that cigarettes have been designed in such a way that they are -- that they cause more harm than necessary." Dep. Proctor at 162:22-163:10. In his report, Dr. Proctor wrote:

> Much of the early knowledge of harms developed in the 19th century was destroyed by mass marketing, resulting in the broad acceptance of the smoking habit even among physicians, more than half of whom were smoking by the 1950s. Many myths about cigarettes persist long after this time—that filters, low tars or lights are safer, for example (a common view even within the scientific community), or that only immoderate smoking is dangerous. It is therefore wrong to claim, as the industry often does, that knowledge or awareness of cigarette harms was widespread prior to the 1960s.

Ex. Rep. Proctor at 4. Dr. Proctor has also testified in *Tully* that most people are unaware nicotine is as addictive as heroin or cocaine. Dep. Proctor at 163:12-164:7. Nor do they expect that smoking just a few cigarettes can lead to becoming a regular smoker, or how difficult cigarettes are to quit. *Id*. Dr. Kyriakoudes testified in *Geist* that consumers did not expect Defendants would design cigarettes to create and sustain addiction. Dep. Kyriakoudes at 251:22-252:1. Ordinary consumers did not expect to undergo physiological changes due to the addictive nature of cigarettes. *Id*. at 247:21:25. Ordinary consumers did not appreciate the increased harm from an inhalable cigarette

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as compared to one that was not inhalable. Id. at 275:2-276:1. Nor did they expect Defendants would purposefully decrease the harshness in smoke in order to deliver nicotine to the brains of smokers. Id. at 252:21-253:1. They do not appreciate the severity and probability of developing tobacco related diseases. *Id*. at 248:2-6.

Third, fraudulent marketing through the industry's decades-long misinformation campaign efforts affected consumers' expectations. Exp. Rep. Kyriakoudes at 64 (industry responded to health attacks on smoking with a "coordinated, well-planned public-relations effort challenging the scientific research linking cigarette use and lung cancer, impairing the public's ability to fully understand the health dangers of cigarette use."); Dep. Kyriakoudes at 266:10-22 (consumers believed industry's messages which created doubt and confusion about whether smoking would impact their health). Dr. Kyriakoudes testified smokers expect filter and light cigarettes to provide a measure of protection and are therefore less risky. Dep. Kyriakoudes at 249:18-250:2. The Nevada Supreme Court in *Trejo* held:

> evidence related to instructions and warnings included with the product, as well as product advertising and marketing, remains relevant to prove a reasonable consumer's expectations with respect to the product.

Trejo, 133 Nev. at 529, 402 P.3d 656. The effect of the extensive misinformation campaign on consumers' expectations cannot be overlooked. As these experts point out, the misinformation campaign that shaped consumers' expectations of cigarettes, including those of Ms. Camacho, is a material issue in dispute in this case.

Other courts have denied motions for summary judgment based on the same suppression of evidence linking tobacco to cancer, finding "An inference can be drawn from this evidence that if the tobacco industry purposefully suppressed scientific

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findings which were supportive of a link between tobacco and cancer, then it is less likely that the ordinary consumer could have known of the connection between smoking and lung cancer. We cannot weigh evidence. The evidence, and the favorable inferences to be drawn from it, is sufficient to question whether ordinary consumers were aware of the association between smoking and lung cancer, and the requisite presumptions on summary judgment leave the question to a trier of fact." *Rivera*, 395 F.3d at 1153 (summary judgment reversed on consumer expectation).

Defendant relies heavily on a phrase in comment i of the Restatement (Second) of Torts § 402A, but Defendant did not merely wrap tobacco in paper and sell cigarettes. Instead, Philip Morris intentionally manipulated tobacco at every stage of development to achieve an inhalable product that was designed to addict users and make it exceedingly difficult for them to quit. This is a classic case of "bad tobacco". *Liggett Group, Inc. v. Davis*, 973 So.2d 467, 478 (Fla. 4th DCA 2007) (Warner, J. concurring) ("That comment explains that "good tobacco" would not be unreasonably dangerous, whereas tobacco with, for instance, marijuana in it may be unreasonably dangerous, suggesting that the presence of harmful additives changes the result. Here, Davis offered evidence that cigarettes contain many additives which make them more palatable to inhale and thus increase the carcinogenic substances ingested by the body over that which would be ingested by the use of a different product, like a cigar, the smoke of which is not generally inhaled…Thus, this would not be a "good tobacco" case."). Regardless, several courts have rejected the applicability of comment i to tobacco cases. *Wright v. Brooke Grp. Ltd.*, 652 N.W.2d 159, 170 (Iowa 2002) ("comment *i* does not apply to the case before us"); *Witherspoon v. Philip Morris Inc.*, 964 F. Supp. 455, 466 (D.D.C. 1997)

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("The infamous comment (i) following § 402A appears to be on very shaky ground currently. Attitudes and knowledge about cigarettes have changed immensely since the comment was written and there is at least some authority that comment (i) is no longer a reasonable explanation of unreasonably dangerous"); *Burton v. R.J. Reynolds Tobacco Co.*, 884 F. Supp. 1515, 1522 (D. Kan. 1995) ("The cigarettes sold by defendants are manufactured products and, as such, the court finds that they are subject to design, packaging, and manufacturing variations which may render them defective even if the tobacco used in their manufacture was initially unadulterated"); *see generally Ontai v. Straub Clinic & Hosp. Inc.,* 659 P.2d 734 (1983) (rejecting strict adoption of the restatement and comment i in particular in strict liability actions in general). Further, the Nevada Supreme Court has held it did not adopt the comments to the restatement wholesale. *Rivera*, 125 Nev. at 192-193 (explaining the Court did not adopt comment j to the Restatement wholesale).

The materials in the record demonstate that Ms. Camacho, like many smokers, smoked cigarettes "with the expectation that they would not harm her health." Exp. Rep. Kyriakoudes at 13. She was no different from the ordinary consumer. Dep. Kyrikoudes at 254:14-18.

B. Defects in Defendant's cigarettes caused Ms. Camacho's cancer

The materials in the record show Defendant's defective and unreasonably dangerous cigarettes caused Ms. Camacho's injury. Plaintiffs' medical expert, Dr. Ruckdeschel, wrote:

> The major brands that she smoked were L&M, Marlboros and Basic and she was reported to have a 50-pack year exposure. **All of these** cigarettes contributed to the development of her cancer.

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Ex. Rep. Ruckdeschel at 5 [emphasis added], attached as **Exhibit 3**.

In addition, Plaintiffs' addiction expert, Dr. Prochaska wrote:

> Characteristic of individuals becoming addicted to nicotine as adolescents, Sandra had a difficult time controlling her use and made multiple failed quit attempts, smoking for 50 years. Addiction to cigarettes containing nicotine is the fundamental reason that people continue to smoke. Nicotine addiction **contributes substantially** to causing an individual to persist in smoking with exposure to the toxins in cigarette smoke. It is the long-term use of tobacco that causes cancer in people who smoke.

Ex. Rep. Prochaska at 66 [emphasis added].

Contrary to Defendant's argument, Plaintiffs need not identify defects unique to Philip Morris' cigarettes. There is no such requirement under Nevada law. Defendants cannot escape liability simply because they designed similarly defective products. The test for defect does not change based on how many co-conspirators' products are also defective. So when Defendant claims that "Plaintiffs' experts opine that *all* conventional cigarettes…are addictive and cause cancer," Defendant mislead the Court by ignoring the experts' opinion that the defects that caused Ms. Camacho's cancer are easily avoidable and have in fact been tested by Defendants themselves. See Ex. Rep. Proctor at 12. ("Both of these re-designs (no inhalation, no addiction) are eminently feasible, and both have been feasible for many decades). The fact that all three Defendants chose defective designs over safer designs does not magically make their cigarettes non-defective.

As Dr. Proctor analogized, "Of course the industry may say that a cigarette that is not designed to be inhaled or does not cause addiction is not a cigarette—but that is like saying that a car without bad brakes is not a car." *Id.*

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C. Plaintiffs' claims are not preempted

Defendant improperly argues Plaintiffs' claims of negligence and strict liability are barred by the doctrine of "conflict preemption" because they are based on the mere manufacture and sale of cigarettes. Defendant's argument revolves around a tortured reading of *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120 (2000). Notably, nowhere in that case does the Supreme Court hold a Plaintiffs is not allowed to bring negligence and strict liability claims against tobacco companies. All that case stands for is that cigarettes should not be banned *by the FDA* and that cigarettes are legal product. Plaintiffs does not dispute that either of those facts are the current state of the law in the United States. Nor does Plaintiffs attempt to hold the Defendant liable for any violation of those facts.

Contrary to what Defendant argues in its Motion, Plaintiffs do not attempt to hold Defendants liable simply because they sell cigarettes or because their cigarettes are dangerous products. Instead, Plaintiffs' amended complaint alleges Defendant's cigarettes are *unreasonably* dangerous and defective, and such defects were a direct cause of Ms. Camacho continuing to smoke cigarettes for nearly 50 years which eventually lead to lung cancer and death. Plaintiffs is holding Defendants accountable for purposefully and intentionally manipulating cigarettes from dangerous products to *unreasonably* dangerous and defective attractive doses of nicotine. The cigarettes Ms. Camacho smoked were not untreated natural tobacco; the cigarettes and the chemical compounds in the cigarettes were intentionally manipulated to artificially create a highly addictive, deadly nicotine delivery devices.

Defendant fails to acknowledge that their preemption argument has been rejected by several higher courts, including the Florida Supreme Court in *R.J. Reynolds Tobacco*

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Company v. Marotta, 214 So. 3d 590, 597-99 (Fla. 2017), and the Eleventh Circuit Court of Appeals in *Graham v. R.J. Reynolds Tobacco Company*, 857 F.3d 1169, 1189-91 (11th Cir. 2017)("R.J. Reynolds and Philip Morris would have us presume that Congress established a right to sell cigarettes based on a handful of federal labeling requirements. We decline to do so. We discern no 'clear and manifest purpose' to displace tort liability based on the dangerousness of all cigarettes manufactured by the tobacco companies") and *Griffin v. Philip Morris USA, Inc.* 730 Fed. Appx. 848, fn 1 (11th Cir. 2018) ("Defendant argues that federal law preempts the strict liability and negligence claims brought under Florida law. In *Graham*, we held that "federal tobacco laws do not preempt state tort claims based on the dangerousness of all the cigarettes manufactured by the tobacco companies."). Moreover, the United States Supreme Court denied Defendant's petition for certiorari review of *Graham*. *R.J. Reynolds Tobacco Co. v. Graham*, 138 S. Ct. 646, 199 L. Ed. 2d 530 (2018). Similarly, in *Philip Morris USA, Inc. v. Arnitz*, Florida's Second District Court of Appeal affirmed a judgment in favor of the Plaintiffs and further held that Plaintiffs' claims were not pre-empted by Federal law:

> Further, Philip Morris argues that Arnitz's design defect claim is barred by federal preemption principles. Arnitz contended that Philip Morris brand cigarettes had a design defect because Philip Morris placed additives in its cigarettes to make them more inhalable than natural tobacco; Philip Morris flue cured the tobacco, heightening the cancer risk; and some of the additives Philip Morris used changed the nicotine to freebase nicotine. We conclude that federal law does not preempt the design defect claim.

Philip Morris USA, Inc. v. Arnitz, 933 So. 2d 693, 698-99 (Fla. 2d DCA 2006) (citations omitted).

Defendants have litigated these same issues over and over, year after year, in multiple states, without success. *See supra; In re Tobacco Cases II*, 41 Cal. 4th 1257 (Cal.

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2007); *Laschke v. Brown & Williamson Tobacco Corp.,* 766 So. 2d 1076 (Fla. 2nd DCA 2000); *Cipollone v. Liggett Group, Inc.*, 505 U.S. 504, 524 (1992); *Hearn v. R.J. Reynolds Tobacco Company,* 279 F. Supp. 2d 1096, 1108 (U.S. Dist. Ct. Arizona 2003); *Carter v. Brown & Williamson Tobacco Corp*., 778 So. 2d 932, 940-41 (Fla. 2000).

Even the United States Court of Appeals for the Ninth Circuit has decided this issue and held that strict liability failure-to-warn claims were not barred by federal preemption. *Rivera*, 395 F. 3d at 1149 ("A trier of fact could find that Philip Morris had an obligation to warn consumers of the health risks of smoking outside of packaging, advertising, and promoting. We conclude that imposing such an obligation would be consistent with a "fair but narrow" reading of the Labeling Act's Section 1334(b) and the plurality's decision in *Cipollone*"). In *Ferlanti v. Liggett Group Inc.,* 929 So. 2d 1172 (Fla. 4th DCA 1172), the Fourth District Court of Appeal held, "to the extent appellant's claims are based on a design defect in the cigarettes smoked by Ms. Camacho, her claims are not barred by the doctrine of conflict preemption." *Ferlanti v. Liggett Grp., Inc.*, 929 So. 2d 1172, 1174 (Fla. 4th DCA 2006); *see also Philip Morris USA, Inc. v. Arnitz*, 933 So. 2d 693, 699 (Fla. 2d DCA 2006) ("We conclude that federal law does not preempt the design defect claim.").

Even the cases the Defendant cite fail to stand for the proposition of conflict preemption. Def. Mot. at 12. For example, Defendants cite *Liggett Grp., Inc. v. Davis*, where the Fourth District Court of Appeal stated on preemption: "Nevertheless, not only our court in *Ferlanti* but also the Second District in *Philip Morris USA, Inc., v. Arnitz,* 933 So.2d 693 (Fla. 2d DCA 2006), has held that a design defect claim against a cigarette

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manufacturer is not preempted by Federal statutes. This is the prevailing position of courts which have addressed this issue." 973 So. 2d 467, 472 (Fla. 4th DCA 2007).

Another example of where this issue has already been decided is in the United States District Court for the Middle District of Florida in *Harris v. R.J. Reynolds Tobacco Company*, 383 F. Supp. 3d 1315 (U.S. District Court, M.D. Fla., 2019). In *Harris*, the court held that the Plaintiffs' negligence and strict liability claims were not preempted by Federal law.

> Defendants also argue that the Federal Cigarette Labeling and Advertising Act ("Labeling Act"), 15 U.S.C. §§ 1331, *et seq.*, expressly preempts Plaintiffs' claims to the extent her theory of liability is based on inadequate labeling or advertising after July 1, 1969. The Labeling Act requires tobacco companies to include specific warnings on cigarette packages, but preempts any "requirement or prohibition based on smoking and health" from "be[ing] imposed under State law with respect to the advertising and promotion of any cigarettes." However, the Labeling Act does not preempt other common law claims outside the scope of the preemption clause, *Cipollone*, 505 U.S. at 517, 112 S.Ct. 2608, such as defective design claims, *id.* at 523, 112 S.Ct. 2608. **Plaintiffs' negligence and strict liability claims were based primarily on the theory that Defendants designed, manufactured, and sold cigarettes that were unreasonably dangerous. Because Plaintiffs' negligence and strict liability claims did not depend simply on a failure-to-warn theory, her claims are not preempted.**

Id. at 1328-1329 (citations omitted).

Finally, Defendant relies heavily on *Pooshs v. Philip Morris USA Inc.,* 904 F. Supp. 2d 1009, 1025-26 (N.D. Cal. 2012), but ignores two critical points. First, *Pooshs* rejected the "theory that cigarettes are defectively designed because they contain nicotine." *Id* at 1025. But that is not Plaintiffs' claim here. Defendant's cigarettes do not merely *contain* nicotine; they are designed and manipulated to rapidly deliver an addiction-creating and addiction-maintaining level of nicotine. Ex. Rep. Proctor at 85 ("tobacco manufacturers could have made cigarettes significantly less deadly and less

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addictive, simply by changing the pH of cigarette smoke and reducing the mass of nicotine in the

cigarette rod to sub-compensable levels—meaning levels so low that a smoker could not extract enough nicotine to create or sustain dependency…Instead, cigarettes have been designed to create and sustain addiction—and to maximize profits.”).

Second, *Pooshs* is a California federal district court’s decision that was disavowed by the California Court of Appeal, because it “uncritically accept[s] the premise that *Brown & Williamson* confirmed an across-the-board congressional intent that cigarettes not be banned; in reaching this conclusion the courts did not appear to consider that ***Brown & Williamson* addressed FDA action, not state action**.” *Major v. R.J. Reynolds Tobacco Co.*, 14 Cal. App. 5th 1179, 1193 (2017)[emphasis added]. This rejection is significant because the state appellate court disagreed with the federal trial court on the basis of preserving states’ traditional rights to impose tort liability:

> Moreover, in an en banc decision, the Eleventh Circuit decided that *Brown & Williamson* “does not address state sovereignty, and it does not consider the preemptive reach of federal legislation on tobacco.”7 (*Graham v. R.J. Reynolds Tobacco Company* (11th Cir. 2017) 857 F.3d 1169, 1190 (en banc).) **As such, the traditional police powers of the states to regulate cigarette sales and impose tort liability on cigarette manufacturers remain.**

Id [emphasis added]. Therefore, *Pooshs* not only stands unpersuasive before this Court in a state tort action, but actually offers a counterexample for why this Court should reject Defendant’s reliance on *FDA v. Brown & Williams* for its preemption argument.

D. Defendant Improperly Rests Its Argument on a Premature Challenge of Plaintiffs’ Experts

Lastly, this Court cannot consider Defendant’s argument against Plaintiffs’

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experts. Def. Mtn. at 4 and 8. Defendant improperly lists an attack on these experts' qualifications as an "undisputed fact," *id* at 4, but summary judgment is not a proceeding for challenging the qualification of experts. These experts have been qualified and testified in numerous courts across the country. Since Defendant's declarations are without evidentiary support here, and Defendant has yet to file a motion and give Plaintiffs the chance to respond, this Court must deny any argument based on them.

CONCLUSION

Plaintiffs respectfully requests this Court deny Defendant's Motion for the reasons stated herein.

DATED this 8th day of June, 2022.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on the 8th day of June, 2022 I caused to be served a true and correct copy of the **PLAINTIFFS' RESPONSE TO DEFENDANT'S MOTION FOR PARTIAL SUMMARY JUDGMENT ON PLAINTIFFS' NEGLIGENCE CLAIMS** on the following person(s) by the following method(s) pursuant to NRCP 5(b) and NEFCR 9:

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/s/: *Lindsay S. Cortez*
An Employee of CLAGGETT & SYKES LAW FIRM

APPENDIX OF EXHIBITS TO PLAINTIFF'S RESPONSES TO DEFENDANTS' MOTIONS FOR SUMMARY JUDGEMENT

Sandra Camacho and Anthony Camacho v. Philip Morris USA, Inc., et al.
Case No. A-19-80765-C

EXHIBIT NUMBER	DOCUMENT TITLE	PAGE NUMBER
1	Declaration and Report of Robert Proctor, Ph.D. dated June 6, 2022	3
2	Declaration and Report of Louis Kyriakoudes, Ph.D. June 6, 2022	139
3	Declaration and Report of John Ruckdeschel, M.D. dated June 6, 2022	247
4	Declaration and Report of Judith Prochaska, Ph.D. dated June 6, 2022	254
5	Deposition of Robert Proctor, Ph.D. taken January 18, 2022 in *Martin Tully v. Philip Morris USA, Inc., et al.,* Case No.: A-19-807657-C	389
6	Deposition of Louis Kyriakoudes, Ph.D. taken November 30, 2021 in *Timothy A. Geist v. Philip Morris USA, Inc., et al.*, Case No.: A-19-807653-C	605
7	Deposition of Sandra Camacho, Volumes 1 – 4 taken November 2, 2021; November 3, 2021; December 7, 2021; December 8, 2021	947
8	Deposition of Anthony Camacho, Volumes 1 – 2 taken November 4, 2021 and December 7, 2021	1357
9	1989 Surgeon General Report	1802
10	Plaintiff's Amended Complaint filed February 26, 2020	1890
11	Defendant Philip Morris USA, Inc.'s Response to Plaintiff's Request for Admissions Regarding TIRC/CTR and TI dated July 16, 2021	1945
12	Defendant R.J. Reynolds Tobacco Company's Reponses to Plaintiff's Request for Admissions Regarding TIRC/CTR and TI dated December 17, 2021	1954

EXHIBIT NUMBER	DOCUMENT TITLE	PAGE NUMBER
13	Order Granting Plaintiffs' Motion to Reconsider Order Granting Defendant R.J. Reynolds Tobacco Company's Motion to Dismiss Plaintiffs' Amended Complaint under NRCP 12(b)(5) dated November 3, 2021	1980
14	Order Denying Defendants' Motion for Summary Judgment on Plaintiff's Punitive Damages Claim dated May 24, 2022 in *Martin Tully v. Philip Morris USA, Inc., et al.,* Case No.: A-19-807657-C	1987

DECLARATION OF ROBERT N. PROCTOR, Ph.D.

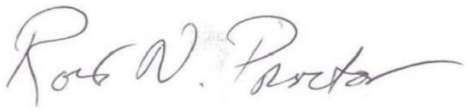
I, Robert N. Proctor, Ph.D., declare as follows:

1. My name is Robert N. Proctor. My address is 688 San Juan St, Stanford, CA 94305.
2. The opinions rendered in my expert report (attached to this declaration) represent my opinions, all held to a reasonable degree of professional certainty, and are based on a reasonable professional probability and scientifically reliable evidence.
3. Philip Morris's claim that smokers had a good understanding of the harms of cigarettes as of 1990 is false. While it is true that most smokers may have known that smoking is "bad for you" or even "harmful" in a very general sense, there is abundant evidence that smokers had a poor understanding of the nature and the magnitude of the harms caused by smoking. Smokers even today have a poor grasp of the fact that filters provide no protection, and don't understand that changes in cigarette designs over the past century or so have done little or nothing to make smoking any safer. "Regret studies" also make it abundantly clear that smokers when they first begin smoking have a very poor understanding of the nature and severity of nicotine addiction (see pp. 13-14 of my expert report for this case). Even public health authorities had a poor understanding of health-related cigarette design, which is why leading public health officials in the U.S. wrongly asserted, even into the 1990s, that cigarettes advertised as "low tar" posed a lesser risk of harm—which is not true.

   It should also not be forgotten that cigarette makers continued denying the truth long after 1990. In my expert report for this case I listed numerous examples of the concealment campaign lasting even up to today (as does the filter fraud). Relevant here, too, is the fact that experts working for the industry continued to deny the hazard in public forums (including regulatory hearings and trial testimony) through the end of the millennium. For further evidence on this matter, see my expert report for this case, my scholarly publications, and testimony I have given in other cigarette litigation.
4. I reserve the right to amend my opinions if further information is provided in any form.

Pursuant to NRS 199.120, under penalty of perjury, I declare that I have read the foregoing document and that the facts stated in it are true.

Dated: June 6, 2022.



Robert N. Proctor
Professor of the History of Science and
Professor, by courtesy, of Pulmonary and Critical Care Medicine
Stanford University

Expert Report

Submitted by Robert N. Proctor
for:

Camacho v. Philip Morris et al.

Feb. 3, 2022

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Introduction and Qualifications

I am Robert N. Proctor, Professor of the History of Science and Professor, by courtesy, of Pulmonary and Critical Care Medicine at Stanford University. 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 (in 1984). I have published extensively on the history of cancer, tobacco, and the harms caused by cigarettes, 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 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. In 2014, I was awarded the Rachel Carson Prize from the Society for the Social Study of Science for my book, *Golden Holocaust* (see my resumé attached to the end of this report). That same year I served as a Senior Scientific Reviewer for the fiftieth anniversary *Report of the United States Surgeon General on Smoking and Health*. I was invited to the White House for release of that report.

In addition to the opinions summarized below, I have also included my views on the history of changing popular and medical understanding of tobacco harms—both of which are crucial for understanding consumer expectations.[1] In summary, my opinions are as follows:

- From 1953 through the end of the 1990s, the leading tobacco manufacturers in the United States conspired to hide the hazards of cigarettes from the American public. Even today they still do not admit the most important facts—that millions of Americans have died from smoking, for example, or that filters, low tars or lights are no safer. They don't admit ever marketing to kids, or having conspired to hide the hazards of cigarettes. The campaign to conceal the harms caused by cigarettes must figure as one of the deadliest conspiracies in the history of human civilization.[2]
- Cigarette makers used multiple means to reassure smokers, including the marketing of gimmick cigarette designs such as king sizes, filters, low tars, lights, menthols, milds, slims, and cigarettes advertised as natural, organic, or containing "no additives." Advertising has played a crucial role in the rise of

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[1] Please note that any and all documents referenced within this report, or in any of my previous expert reports or testimony, may be used as exhibits to illustrate, summarize or support my opinions. Documents cited in my book, *Golden Holocaust* or other of my publications may be used as exhibits to illustrate, summarize or support my opinions.

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

the cigarette epidemic; glamorizing smoking has also helped make it a normal and acceptable part of American life, and created false consumer expectations with regard to cigarette safety.

- Cigarettes are defective and unreasonably dangerous, because they do not perform as a reasonable consumer would expect: they are unsafe when used in a reasonably foreseeable manner, and cause far more harm than is necessary. The three principal defects are **inhalability**, which causes lung disease, **nicotine maintenance**, which causes addiction, and **combustion**, which causes needlessly high levels of harmful chemicals in smoke. Cigarettes have been deliberately designed to preserve such defects, even though it would be easy to cure and avoid them. Cigarette makers have, in fact, from time to time made cigarettes that avoid one or another of these defects.
- The "filters" on cigarettes are fraudulent, because they don't make cigarettes any safer. They don't really even "filter" the smoke. Cigarettes with such gimmicks are not "filter-tipped" but rather "fraud-tipped." Many brands of cigarettes have been advertised as "filtered," with such fraudulent claims appearing right on the pack.
- Popular attitudes toward smoking have changed dramatically over time, as medical knowledge penetrated popular culture. Much of the early knowledge of harms developed in the 19th century was destroyed by mass marketing, resulting in the broad acceptance of the smoking habit even among physicians, more than half of whom were smoking by the 1950s. Many myths about cigarettes persist long after this time—that filters, low tars or lights are safer, for example (a common view even within the scientific community), or that only immoderate smoking is dangerous. It is therefore wrong to claim, as the industry often does, that knowledge or awareness of cigarette harms was widespread prior to the 1960s.
- The tobacco industry has a long history of marketing to kids, and of denying marketing to kids.
- The tobacco industry has a long history of manipulating the chemistry of nicotine, principally with the goal of creating a mild and more attractive cigarette but also to create and sustain addiction.

- The tobacco industry has a long history of using "third parties" to advance its denialist program, recognizing its own lack of credibility.
- The tobacco industry has a long history of manipulating science, with the goal of furthering its denialist and reassurance agenda.
- No tobacco company has ever admitted the most important facts about addiction, advertising, the industry's history of marketing to youth or participation in a concealment campaign. And no company even to this day has ever admitted the true scope and severity of the cigarette epidemic—that millions of people have died from smoking, for example.

To provide support for these views, I will first give some historical background on the tobacco plant and cigarette manufacturing, including the crucial role of *inhalability* as one of three principal design defects of cigarettes—the others being *addiction*, caused by nicotine manipulation, and *combustion*, caused by the failure to replace traditional cigarettes by heat-not-burn technology. I also look at the role of cigarette design in creating false consumer expectations. I will then trace the history of the discovery of tobacco hazards and the history of popular understanding (and ignorance) of such hazards in the United States.

The Tobacco Plant

The tobacco plant is native to the Americas; it is a member of the genus *Nicotiana* 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-210 in the leaf and smoke, for example), and growing conditions (sun, water, density)

help to determine 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 the American piedmont can 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 pesticide, and a poison even for mammals: a single drop on the tongue of a dog, for example, can cause convulsions or even death.)

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 Americans die from smoking.

Flue Curing: The Fatal Flaw of Modern Cigarette Manufacturing

The modern cigarette[3] 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 the smoke from other forms of tobacco, is *inhalable*. The modern cigarette is inhalable, because the

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[3] The term *cigarette* has nineteenth century origins, though "little cigars" 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, by *cigarette* we mean 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 sometimes 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 spread of this new form of tobacco use into Western Europe and thence back into the Americas.

tobacco used in its manufacture is produced via a method of curing known as *flue curing*, which traps the native sugars in the leaf. Sugar is one of the most important constituents in tobacco leaf; it plays a crucial role in determining both the principal route of exposure (i.e., inhalation) and the extent of addiction (sugars when burned yield acetaldehydes that create a dopamine synergy with nicotine in the brain).

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 activity 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, and plays a key role in determining the extent to which a smoking device causes harm. Tobaccos of the sort traditionally used in cigar or pipe tobacco manufacture are *air cured*—simply by drying at room temperature—which reduces the sugar content in the leaf from about 25 percent (by weight) to about 2 percent. By contrast, flue 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?

Sugar is important, because when you burn sugars you produce acids (malic, citric, etc.) that neutralize the resulting smoke, causing it to be less harsh, less alkaline. The contrast with pipe and cigar tobaccos is significant: alkaline smoke of the sort generated by pipe tobacco and cigars is not inhalable; the smoke is too harsh. Smokers of traditional 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 significantly less alkaline, with a pH typically around 6.5 or 6.0. Cigarette smoke is significantly milder, and therefore easier to inhale than other forms of tobacco. Which is why cigarettes cause lung cancer and other maladies of the lungs.

Most cigarette manufacturing in the U.S. and elsewhere now uses flue cured tobacco, also known as “bright” or “Virginia” leaf. 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 was not flue cured but rather

air cured, which when burned produces a non-inhalable smoke. It is really first with the invention of high-sugar tobaccos (notably flue cured and Turkish) that smoking causes astronomical levels of cancer and of death.

Which is also why we find so little lung cancer prior to the twentieth century: very few people were inhaling smoke from their tobacco, it was just too harsh.[4] Lung cancer was an extremely rare disease; only 140 cases are known in the scientific literature prior to the twentieth century. Isaac Adler in his 1912 textbook on *Pulmonary Malignant Growths of the Lung*—the first textbook on lung cancer—called it "the rarest form of disease." By contrast, some 140,000 Americans 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 decisions made in the realm of cigarette design and manufacture, decisions that could have been reversed at any time (including the present). Cigarettes don't have to cause as much harm as they do.

The industry wants us to believe that cigarettes are *inherently* dangerous, but that is misleading, given the multiple meanings of the word "inherently." Inherently can mean "very," in which case it is true that cigarettes are inherently dangerous. Inherently can also mean "by virtue of the property of a thing," in which case here again it is true that cigarettes are dangerous by virtue of how they are made. But "inherently dangerous" can also mean "unavoidably dangerous," in the sense that a knife or a car are dangerous. There will always be harms from using knives or cars; they are inherently dangerous, unavoidably dangerous. But a cigarette is *not* inherently dangerous, it is rather dangerous by design.[5] The cigarette as most commonly manufactured is not like a car or a knife, it is rather like a car with bad brakes, or a ladder with a faulty step. The two principal defects are inhalability and addiction, both of which are defects because neither is necessary for the cigarette to be a smokable artifact. A third defect is

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[4] Cigarettes made purely from Turkish tobacco were also commonly inhaled—because Turkish (or "Oriental") tobacco also produces a low pH smoke. Access to Turkish tobacco was largely cut off during the First World War, however, and American manufacturers of cigarettes shifted over to using more flue-cured.

[5] *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General* (Rockville: HHS, Office on Smoking and Health, 2014), "Executive Summary," p. 15.

combustion, which produces compounds that are far more toxic than those in cigarettes (like Premier and Eclipse) that don't involve combustion. Addiction, inhalation and combustion are design defects because they make cigarettes needlessly, avoidably, and (therefore) unreasonably dangerous. Cigarettes cause more harm than a reasonable consumer would expect.

It is easy to make cigarettes that are not inhalable, and will not create or sustain addiction. Cigarettes that deliver smoke with a pH greater than 8 will generally not be inhalable—and will not cause lung disease. Traditional cigars made from air-cured tobaccos produce a non-inhalable smoke, which is why they don't cause cancers of the lung. Cigarette makers have long pondered the utility of making cigarettes that would produce a "non-inhalable smoke"; the idea here, as discussed in many of the industry's internal documents, would be a cigarette "you can enjoy without inhaling," cigarettes that would have a "high mouth feel" and be "non-inhalable."[6] At a 1983 meeting of Philip Morris' Board of Directors, the idea of a "non-inhalable high taste cigarette" was targeted as "a worthwhile idea."[7] Bill Farone was exploring this idea at Philip Morris in 1983: the goal was not a "little cigar," but rather a cigarette that would "taste like a high impact, full-flavored cigarette," albeit one "that does not require inhalation."[8]

We find similar ideas explored at Reynolds. Claude Teague in 1973, for example, instructed his colleagues to prepare and evaluate a "non-inhalable cigarette system" with the goal of producing a "prototype cigarette system with draft, flavor, satisfaction [and the] non-inhalability" of a traditional pipe. The goal was a non-inhalable cigarette, a cigarette delivering the "convenience of a cigarette with the qualities of a pipe."[9] We

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[6] L. F. Meyer and T. T. Goodale (Philip Morris), "New Product Ideas," April 13, 1983, https://www.industrydocuments.ucsf.edu/docs/#id=gkjx0112. There are many other proposals of this sort; see, for example, C. L. Neumann et al. to Senkus (Reynolds), March 30, 1973, proposing "A non-inhalable cigarette," https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=srml0088.

[7] Karol Sharp to Distribution, "Minutes of the Directors' Meeting, June 6, 1983," June 10, 1983, https://www.industrydocuments.ucsf.edu/docs/#id=gnjx0112, p. 2.

[8] William A. Farone to Leo F. Meyer and T. T. Goodale, "Option: Cigarette With High Mouth Feel/Flavor (Non-Inhalable)," Jan. 13, 1983, https://www.industrydocuments.ucsf.edu/docs/#id=hpvd0115.

[9] Claude E. Teague, "Revision of 'Proposals for New Projects or Major Expansion of Existing Projects—for 1974 and Beyond" (5//4/73 and 5/7/73 Versions) as a Result of Discussion and Evaluation by Planning Team," May 10, 1973, https://www.industrydocuments.ucsf.edu/docs/#id=gpyl0095. Compare his "Research

find this same idea expressed in a 1973 memo to the company's head of research, which listed "a non-inhalable cigarette" as part of the company's Nicotine Optimization Program.[10] Time and again, in the archives of all the leading cigarette manufacturers, we find this consideration of making a non-inhalable cigarette. On March 26, 1976, for example, Reynolds explored the possibility of "A cigarette designed and labeled as being 'non-inhalable', i.e., with alkaline, high nicotine smoke."[11] Similar ideas were explored outside the U.S.: the British American Tobacco Company in 1984, for example, used pipe tobacco as its model for a non-inhalable cigarette, reasoning that smoke from pipes was "not inhaled and therefore presumably safer."[12] Researchers from BATCo's corporate affiliates in 1967 had stated this explicitly as a premise, indeed one of their fundamental "Assumptions": "If there is no inhaling, there is no lung cancer or respiratory disease."[13]

Such cigarettes have also been produced commercially. The American Tobacco Company from 1955 actually marketed a "Half and Half" brand, described as "a revolutionary new product for both pipe and cigarette smoker" that could be smoked either in pipes or in cigarettes, with the presumption that it didn't have to be inhaled: "a pipe tobacco in the convenience of a modern filter cigarette which need not be inhaled to be enjoyed."[14] Philip Morris in 1964 also marketed a Puritan brand cigarette (a

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Planning Memorandum on a New Type of Product with the Convenience of a Cigarette and the Smoking Qualities of a Pipe," Nov. 10, 1971, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=ptnv0094.

[10] C. L. Neumann et al. to Murray Senkus, "Summary of Ideas Discussed by the Profitability Idea group," March 30, 1973, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=srml0088.

[11] Claude E. Teague, "Planning Assumptions and Forecast for the Period 1976-1985+," March 26, 1975, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=nqpb0094, p. 12. This same document postulates "a small market for a quality cigarette delivering essentially no nicotine."

[12] BATCo., "R&D/Marketing Conference," 1984, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=qqbk0037.

[13] S. J. Green, "B.A.T. – R&D Conference – Montreal, Oct. 24-27, 1967," Nov. 8, 1967, http://legacy.library.ucsf.edu/tid/ttm24a99.

[14] The Rowland Company, Inc. (for American Tobacco), "A National Publicity Program for Half and Half," http://legacy.library.ucsf.edu/tid/xfq60a00. For older ads for Half & Half , including budgets dating back to 1938 and instructions from the 1960s for how to place ads for "Half and Half Filter Cigarettes," including "position requests" for placement opposite an editorial and requests for separation (in a magazine) "by at least six pages" from other cigarette ads; see https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=hkvy0002.

"cigaretto") that "need not be inhaled to be enjoyed."[15] Madison "little cigars," made by Lorillard from 1958 to 1988, were similar, as was the PT ("Pipe Tobacco") brand of cigarette marketed in 1964 by the Bloch Bros.—made from the company's premium Kentucky Club tobacco to capitalize on the success of Half and Half. Madisons were also called "cigarettos," and were advertised with the slogan: "Satisfy your smoking taste with Madison Little Cigars . . . even without inhaling!" (in the mid-1960s).[16] Several companies in the 1950s and '60s made cigar-like cigarettes, meaning cigarettes not designed to be inhaled. Lorillard actually made three different brands along these lines: Madisons I've already mentioned, but Lorillard also marketed "little cigars" under the brand names Between-the-Acts and Omega (in menthol and cherry flavors), both of which were launched to capitalize on fears attached to conventional cigarettes. *Consumer Reports* commented on this trend in 1958, noting that:

> Many companies are now bringing out cigar-like cigarettes—or is it cigarette-like cigars?—presumably designed to cash in on the publicity attending those broad statistical studies, which seem to establish that cigar-smokers are less likely to develop lung cancer than cigarette smokers are.[17]

Cigarette companies reflected on such trends, albeit privately. In 1964, for example, British cigarette makers understood this trend toward non-inhalable products—American Tobacco's Half and Half brand, for example—to be "an attempt to exploit the finding by the SGAC [Surgeon General's Advisory Committee] that pipe smokers have lower lung cancer rates (without saying so)."[18] It is not difficult to make cigarettes that will not be routinely inhaled, all you have to do is use tobacco varieties traditionally used in cigars.

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15 "Philip Morris Launches Puritan Cigarettes," *Tobacco*, April 10, 1964, p. 19, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=xgby0126; and for Puritan's brand history: https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=rknn0139, which talks about Puritan as "filled with pipe tobacco and created for smokers who want flavor without inhaling."

16 Lorillard for many years dominated the "little cigar" market, with nearly 60 percent of the American market in 1964; see "National Sales Meeting, January 11th, 12th, 13th and 14th, 1965," https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=hrpf0121.

17 "So You Want to Do Something," *Consumer Reports*, July 1958, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=ynlk0026

18 Geoffrey E. Todd, "Report on Policy Aspects of the Smoking and Health Situation in U.S.A.," Oct. 1964, http://legacy.library.ucsf.edu/tid/los74e00, p. 28.

It is also easy to make cigarettes that cannot create or sustain addiction. Cigarettes with substantially reduced nicotine in the rod—say, less than three percent of what we find in a Parliament or a Marlboro—will not have sufficient nicotine to create or sustain addiction.

Both of these re-designs (no inhalation, no addiction) are eminently feasible, and both have been feasible for many decades. High pH smoke is easily obtained by using low-sugar leaf blends of the sort found in traditional cigars—whose smoke is typically not inhaled. Very low-nicotine tobaccos are also easily produced, either by solvent extraction or genetic means. Philip Morris in fact has produced three commercial cigarettes—Merit De-Nic, Benson & Hedges De-Nic, and the free-standing Next brand—none of which had sufficient nicotine to create or sustain addiction. The most successful means of removing nicotine has been through supercritical fluid extraction, though Philip Morris by 1986 had identified over a hundred different patents for techniques to denicotinize tobacco.[19] These allow alternative designs to cigarettes that do not have the addiction defect.

Of course the industry may say that a cigarette that is not designed to be inhaled or does not cause addiction is not a cigarette—but that is like saying that a car without bad brakes is not a car. Cigarettes have legal definitions, and such definitions—in the Federal Cigarette Labelling and Advertising Act of 1965, for example—typically define a cigarette as "a roll of tobacco wrapped in paper."[20] There is no mention of inhalation or inhalability, and no mention of addiction. And neither of these is part of *the definition* of a cigarette. Cigarettes don't have to be inhaled, and they don't have to be addictive; they don't even have to be combusted (see below).

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[19] Joshua Dunsby and Lisa A. Bero, "A Nicotine Delivery Device without the Nicotine? Tobacco Industry Development of Low Nicotine Cigarettes," *Tobacco Control*, 13 (2004): https://escholarship.org/uc/item/65k6g0xw. And for PM's list of patents: https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=snkw0117. One patent from 1939 outlined a method to reduce the nicotine in a cigarette by more than 95 percent; see https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=rrgj0136. comparable to that of Philip Morris' commercial De-Nic brands from the 1980s.

[20] The 1965 Federal Cigarette Labelling and Advertising Act defines a cigarette as "any roll of tobacco wrapped in paper"; see the Congressional Hearings on "Cigarette Labeling and Advertising," March 22 – April 2, 1965, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=smmm0178. Similar language is used to define cigarettes in the Internal Revenue Code and the U.S. Federal Criminal Code.

Inhalability, addiction and combustion are all the result of design decisions made by the manufacturers. And it would be absurd to say that a cigarette that does not addict most of its smokers is not a cigarette (which is essentially the industry's claim). It might well be true that a cigarette that does not contain nicotine will not sell as well to an addicted smoker—but that cannot be used to justify the (patently absurd) claim that a non-addictive cigarette would not be a cigarette. (Re)-elevating smoke pH and reducing nicotine in the rod would not reduce the acceptability of cigarettes to non-addicted users, a fact that cigarette makers often comment on in their internal communications.

Here we should recall that there are two kinds of smokers: *beginning smokers* who are not addicted, and for whom the nicotine is actually a negative; and *confirmed* or *addicted smokers*, for whom nicotine is required to satisfy their physiologic dependence. The cigarette industry in the 1960s and 1970s recognized these as two separate markets, according to what they called the "two stage" model.[21] Young people do not start smoking to satisfy a non-existent craving, they develop that craving over time—which coincides with their development of a "need" to smoke cigarettes containing a certain level of nicotine. But for beginning smokers, the presence of nicotine in a cigarette is actually a negative.[22]

Again, it could well be true that cigarettes with sub-addictive levels of nicotine will not sell as well in the current market, where most smokers are addicted. But that cannot be used to define addiction as "inherent" to the product. That would be like saying that the purpose of a cigarette is to create and sustain addiction—which violates common sense. Smokers do not smoke in order to become addicted—the reality is that nearly all come to regret having started (once they become addicted).[23] As most commonly designed, the cigarette disappoints. Of course the industry has long

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[21] Helmut Wakeham, "Smoker Psychology Research," Nov. 26, 1969, http://legacy.library.ucsf.edu/tid/xgw56b00; Claude E. Teague, Jr., "Research Planning Memorandum on Some Thoughts about New Brands of Cigarettes for the Youth Market," Feb. 2, 1973, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=hxhh0045.

[22] Claude E. Teague, Jr., "Research Planning Memorandum on Some Thoughts About New Brands of Cigarettes for the Youth Market," Feb. 2, 1973, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=gmnx0096.

[23] G. T. Fong et al., "The Near-Universal Experience of Regret among Smokers in Four Countries: Findings from the International Tobacco Control Policy Evaluation Survey," *Nicotine & Tobacco Research*, 6 (Dec. 2004): S341-S351.

understood and capitalized on the addiction defect, which is why we find so many of the industry's internal documents talking about the sale of cigarettes (especially to youth) using terms such as "bonanza."[24] Recall the "Forwarding Memorandum" from 1953, where one of the leading industry researchers gave this assessment: "Fortunately for us, cigarettes are a habit they can't break." Or as Claude E. Teague, Jr., at Reynolds put it in 1973: "Happily for the tobacco industry, nicotine is both habituating and unique in its variety of physiological actions."[25]

The Discovery of Tobacco Hazards

A common assumption made by experts employed by cigarette manufacturers and their legal agents is that people have essentially always known about the hazards of tobacco; the hazards are presumed to be—and have long been—"common knowledge."[26] This undifferentiated (for whom was knowledge common? Kids? Adults?) and ultimately ahistorical assumption fails to consider: a) the historical recency of the cigarette habit, and therefore the recency of the distinctive diseases caused by cigarettes; b) the fact that people may be "aware" of cigarettes being dangerous in the abstract, without understanding how severe or immediate or personal that danger may be; c) crucial differences between expert and "lay" opinions concerning hazards (scientists vs. ordinary smokers); and especially d) the influence of the tobacco industry in shaping popular attitudes toward cigarettes.

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 more broadly, by ordinary smokers?

Anecdotal evidence of harms from tobacco use dates back several

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[24] John H. McCain (William Esty Co.) to J. O. Watson, "RE: NFO Preference Share Data—'Youth' Market," March 8, 1973, http://legacy.library.ucsf.edu/tid/fyy49d00.
[25] Claude E. Teague, Jr., "Research Planning Memorandum on the Nature of the Tobacco Business and the Crucial Role of Nicotine Therein," April 14, 1972, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=gxhh0045.
[26] For the origins 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.

centuries (we have no record of how Native Americans may have understood maladies caused by smoking). King James I (1566-1625) is often cited for his lamentation of tobacco use as "a custom loathsome to the eye, hateful to the nose, harmful to the brain [and] dangerous to the lungs,"[27] and numerous other tirades against Lady Nicotine can be found in subsequent years. *Nicotiana* is snubbed as dirty, smelly, or likely to stunt one's growth or lead one (especially women or children) 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 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 by the 1850s Frédéric Bouisson in France was talking about "smokers' cancers" (*cancers des fumeurs*) in patients in whom he had diagnosed malignancies of the mouth.

Also in the U.S., such ailments were publicized from time to time and attributed to tobacco use (principally cigars and pipes, since cigarettes were not yet being widely smoked). Some early critics of tobacco even talked about having been "addicted"—John Quincy Adams, for example, the nation's sixth president, who allowed an 1845 letter to his pastor to be published in a radical anti-tobacco tract published by Benjamin Lane. Adams is notable for his denigration of "street smoking": a polite gentleman, he says, will not smoke on the street.[28] People at this time didn't commonly smoke on public transportation—on rail lines or steamers "abaft the wheel," for example. This illustrates some of the many inhibitions that had to be overcome for smoking to become routine and ubiquitous. Smoking was uncommon even in restaurants until the American Tobacco Company

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[27] A facsimile of King James' 1604 *Counterblaste to Tobacco* can be viewed at: https://www.google.com/books/edition/A_Counterblaste_to_Tobacco/igEeJzd1umoC?hl=en&gbpv=1&printsec=frontcover. The King nowhere uses "smoke" or "smoking" as a verb; his reference is only to the "use" (or "abuse") or "taking" or "puffing" of tobacco—with no reference to "the smoker" as an identity, which only comes much later in history.

[28] Benjamin I. Lane, *The Mysteries of Tobacco, with an Introductory Letter by John Quincy Adams* (New York: Wiley and Putnam, 1846), pp. 12-28. Lane was an anti-tobacco zealot, characterizing tobacco as a "vile practice" leading one into "intellectual ruins"; he talks about "the unspeakable wretchedness of the tobacco consumer" and a "strong narcotic" that has "darkened the divine." Lane also maintains that tobacco "often produces insanity" or even "total insanity"; he even claims that tobacco "sends down its influence to posterity, so that the children of those who use it to excess are more liable to insanity." Tobacco he calls "an enemy, a mortal enemy . . . a mania . . . a monstrosity . . . an utter abomination [and] a poison of a most deceitful and malignant kind."

pushed for diners to "reach for a Lucky instead of a sweet" (in the 1920s). Indoor smoking increased dramatically in the early decades of the century, and Reynolds by the mid-1930s was trying to get people to smoke a Camel cigarette after every course of a Thanksgiving meal—to aid in "digestion."

As for the defect of inhalability: it's important to appreciate that as early as the 19th century, a few prescient physicians identified the tendency to inhale as the most dangerous aspect of cigarettes. The *Boston Medical and Surgical Journal* in 1882, for example, lamented "inhaling" as one of the "pernicious fashions" of smoking cigarettes:

> One of the pernicious fashions connected with cigarette smoking is "inhaling." The ideal cigarette smoker is never so happy as when he inhales the smoke, holds it in his air-passages for some time, and then blows it out in a volume through nose and mouth. . . .
>
> The dangers, then, which are incident to cigarette smoking are, first, the early age at which it is taken up; second, the liability to excess; and third, the bad custom of inhaling the smoke. These are dangers superadded to those attendant on the ordinary use of tobacco, and should be carefully considered by all medical men.[29]

This same article commented that cigars were "better than pipes, and far better than cigarettes," adding that "the ease with which these bits of paper can be lighted and smoked" contributed to the damage they caused.

The *Boston Medical and Surgical Journal* was not the only authority identifying inhalation as the distinctive hazard of cigarettes. In his 1883 *Health Notes for Students*, a Dr. Burt G. Wilder from Cornell likewise quoted a "well-known physician" that habitual inhalation was "where the great harm and peril to the smoker lie . . . . it is far the most injurious form of smoking."[30] And in the *Medical News* five years later, a Dr. William L. Dudley similarly expressed his belief that the distinctive hazards of cigarettes were "not due to anything peculiar in the composition of the cigarette, but to the practice of inhaling the smoke." Dudley maintained that smoking was "injurious in proportion as the smoke is inhaled'; indeed, "Were the smoke of a cigar or pipe inhaled in the same manner as that in cigarette-smoking it would be just as injurious."[31] A St. Louis throat

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[29] "The Use of Tobacco," *Boston Medical and Surgical Journal*, 107 (1882), p. 501.
[30] Burt G. Wilder, *Health Notes for Students* (NY: Putnam's Sons, 1883), p. 47.
[31] William L. Dudley, "The Poisonous Effects of Cigarette-Smoking," *Medical News*, 53 (1888): 304-05, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=zjcy0214.

specialist in 1895 similarly observed that "all real devotees" of the cigarette were in the practice of inhaling and that "mildness" was the principal danger: "In its mildness is concealed its very capacity for doing harm."[32]

Some of these Prohibition-era authors recognized that the habit of inhalation made cigarettes especially addictive. In 1889, a Lewis Balch from New York's State Board of Health in Albany identified "the chief danger from the use of cigarettes" as stemming from the fact that they were "more likely to be used to excess" than tobacco in any other form; Balch also mentioned the particular danger of inhalation, which allowed the smoke to "more readily and rapidly gain access by direct absorption into the circulation than when used in any other way."[33] Max MacLevy in his 1916 *Tobacco Habit Easily Conquered*, an early self-help guide (and text often used by the industry in court), offered advice on how to escape from the "thralldom of nicotine," but also talked about inhalation as exacerbating the danger: "One who inhales the smoke is a deeper addict than one who doesn't." MacLevy claimed that tobacco was a more powerful addicting agent even than alcohol: "Men in prison quickly become accustomed to doing without alcohol, but they simply *must* have their tobacco."[34]

Even given this long-standing historical opposition to tobacco in certain quarters, it would be wrong to imagine that knowledge of deadly harms was therefore widespread or "universal" prior to the second half of the twentieth century. Tobacco in the 1800s was commonly used as a medicine—the plant was prescribed for many different kinds of ailments, and up until the twentieth century was listed in the official pharmacopoeia of many nations. Romantics waxed poetic over the virtues of the "Queen's herb" (aka "the sovereign herb"), and there are countless paeans to smoke.

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[32] J. C. Mulhall, "The Cigarette Habit," *New York Medical Journal*, 62 (1895): 686-87, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=zhcx0064. Compare also the *Chicago Medical Examiner* from July-Dec. 1887 (p. 356), where a Dr. M. F. Coomes of Louisville claimed that cigarette smoking was "especially injurious because the smoke is so universally inhaled, causing pharyngitis, laryngitis and chronic irritation in the nose, not to mention the injury it may occasion to trachea and lungs."

[33] Lewis Balch in the "Annual 23 Report of the State Board of Health of New York," p. 516; compare also my deposition for *Cohen vs. Reynolds*, Nov. 12, 2012, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=ppyg0225, pp. 118-28.

[34] Max MacLevy, *Tobacco Habit Easily Conquered* (New York: Albro Society, 1916), p. 11. MacLevy talks about the havoc of tobacco "*when used to excess*" (p. 8); he also writes that "insane asylums hold many victims who owe their condition primarily to tobacco."

Tobacco was used to treat numerous 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 for many years was known to physicians as "the panacea,"[35] 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. And the tobacco as most commonly consumed (i.e., as chew or smoked in pipes or cigars) was not nearly as deadly as it would become with the mass consumption of machine-rolled cigarettes. On a per-gram basis, cigarettes made tobacco an order of magnitude more deadly than the other, more traditional, ways it had been used.

Cigarette consumption grew dramatically in the late nineteenth and early twentieth century, following the invention of machines that could roll hundreds of thousands of cigarettes per day (notably the Bonsack machine, introduced in the 1880s). Cigarettes prior to this time had been rolled by hand, limiting the quantity available for sale and the price for which they could be purchased. Machine rolling increased the rate at which they could be produced, and dropped their price by about a factor of ten, making them more affordable to an enlarged fraction of the American public. It is important to appreciate how dramatically this changed American consumer habits: if all of the cigarettes smoked in the U.S. today were manufactured by the same techniques used prior to the Bonsack machine, this would require a labor force of over three million people—and cigarette rolling would be one of the most common occupations in the country.

Mass marketing was also crucial for the rise of modern cigarettes, with many of the most important innovations being pioneered by cigarette makers (chromolithography, for example, but also pre-talkie movie ads, mechanical billboards, jingle and slogan contests, product placement, and so forth). American Tobacco in the 1920s and '30s harnessed the power of Madison Avenue, and companies such as Reynolds made no secret of the power of advertising. R.J. Reynolds chairman S. Clay Williams in 1941, for example, testified that it was "absolutely essential to maintain advertising in

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

the cigarette business in order to maintain, and certainly to extend, the volume of consumption on Camel Cigarettes."[36] Advertising was used to promote an image of the cigarette as glamorous and adventurous, or even daring (and often "naughty"). Cigarette ads appeared in many different media: tobacco companies were the first to advertise by skywriting and skycasting (by loudspeaker, from a plane), and creative new means of advertising using billboards and point of sale props were developed. The cigarette industry invented baseball trading cards, for example, as a means to stiffen early cigarette packs while also promoting the sale of cigarettes. Cigarette ads appeared in magazines and in newspapers—and in movie theaters and even in the comic strips, including the Sunday "funnies."

Ads appeared on radio and on television, and shows were very often "brought to you by" a particular brand of cigarette. For many years, cigarettes were the most widely advertised product on television, reaching millions of views with literally billions of "messages" every year—dutifully quantified on a regular basis by the industry.

It should also be noted that even when people did read or hear about "the cancer scare" or some other harm from smoking, they were also led to believe— repeatedly and from various sources—that smoking was safe. Popular sports figures, movie stars, and other high-profile personalities appeared in thousands of cheery tobacco ads with never a mention of any hazard. Ronald Reagan and Joe DiMaggio advertised cigarettes in the 1940s, as did Lucille Ball and Desi Arnaz in the 1950s. Perry Como, Jimmy Stewart, Frank Sinatra, and football and golf greats like Frank Gifford and Arnold Palmer all appeared in tobacco ads—along with myriad other popular athletes, singers, even politicians. Popular pro-smoking books reported the testimony of physicians that tobacco was safe or that the dangers had been exaggerated.[37] Millions of Americans were led to believe that cigarettes were sexy, satisfying, and safe.

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[36] Harry M. Wootten, "43 Billion Camels Sold in a Year," *Printer's Ink*, Oct. 31, 1941, p. 20, http://legacy.library.ucsf.edu/tid/mxu51a00.

[37] Many examples of American physicians taking such a stand are reported in Lloyd Mallan, *It Is Safe to Smoke* (New York: Hawthorn, 1966). Mallan also records Senator Bass's response, after hearing conflicting testimony in Senate Commerce Committee hearings of March 1965: "What impresses me, then—and the conclusion that I reach as a layman—is that there seems to be still a great deal of doubt as to the cause of cancer" (p. 140).

Part of this sense of safety came from the fact that cigarette makers tried very hard to establish the image of smoking as an ordinary and respectable activity. Doctors were used to advertise cigarettes, and smoking brand x, y, or z was said to help "soothe the throat" or "aid digestion" or "keep you alert," etc. These early "white-coat" advertisements claimed many health virtues for cigarettes: Camels were said to "never get on your nerves" (1934) and wouldn't "get your wind" (1935); Kools were "soothing to your throat" (1937); L&M Filters were "just what the doctor ordered" (1953); Kents with the Micronite Filter gave smokers "the protection they need" (1953); Old Gold you smoked "for a treat, instead of a treatment"; Larks had filters packed with "the basic material science uses to purify air"; women were told to "reach for a Lucky instead of a sweet,"; Belairs let you "breathe easy" (1960); Newports had "the ocean-breeze freshness of super-porous Micropore paper"; Salems were "Springtime fresh," and so forth.[38] Philip Morris cigarettes were supposed to provide "pleasure without penalties" (1941) and to take "the fear out of smoking" (1953); Camels were good for a supposed "T-Zone—Throat and Taste."[39]

Cigarette consumption was also promoted by governments, which came to recognize tobacco as a convenient source of tax revenue. And though a number of U.S. states banned the sale of cigarettes in the 1890s, the end of Prohibition in the 1920s brought with it a more accepting attitude.[40] The inclusion of cigarettes with military rations also helped popularize cigarettes: General John J. Pershing, commander of America's Expeditionary Forces, had argued that to win the war his soldiers needed "tobacco as much as bullets."[41] Millions of men returned from the Great War (1914-1918) addicted to cigarettes, thanks partly to the view that cigarettes were a "less injurious" form of smoke. Chewing tobacco, in particular, had become suspect, thanks to the *spitting* attached to that habit. Soldiers were cautioned against spitting in consequence of fears of spreading germs—a

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[38] Thousands of downloadable high-resolution examples of such ads—including more than 600 different Salem ads and thousands of ads for Marlboro, Parliament, etc.—can be found on the website I have developed with Robert Jackler at http://srita.stanford.edu/.

[39] A Brown and Williamson document listing 186 different health slogans used in cigarette ads can be found in "A Review of Health References in Cigarette Advertising, 1927-1964," http://legacy.library.ucsf.edu/tid/rus56b00.

[40] John C. Burnham, *Bad Habits: Drinking, Smoking, Taking Drugs, Gambling, Sexual Misbehavior, and Swearing in American History* (New York: NYU Press, 1993).

[41] 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), p. 63.

particular concern as time spent in the trenches stretched from months into years. Cigarettes did not involve spitting—which allowed them to be regarded as a more sanitary form of tobacco use. Cigarette makers advertised cigarettes as a "less injurious" form of smoke, as in 1935, when the American Tobacco Company attributed the rise of the modern cigarette to the "sedative effects of smoking" along with "the dissipation of the ancient prejudice" against cigarettes, and "a growing belief that cigarettes—being 'milder' than other forms of tobacco smoking—are less 'injurious.'"[42]

By this time, cigarette sales were growing rapidly. Americans had smoked only *1 billion* cigarettes in 1880, but by 1920 annual consumption had climbed to *45 billion*, a number that would increase ten-fold in coming decades. Groups like the Red Cross and YMCA organized efforts to send cigarettes to soldiers on the front, with prompting and financial support from Percival S. Hill, who replaced James B. Duke as president of the American Tobacco Company, and his son George Washington Hill, who succeeded Percival in this capacity. The total number of cigarettes smoked in the U.S. continued to grow until the early 1980s,[43] when more were being smoked in one *day* than had been smoked *in a year* a century earlier.

Lung cancer was not recognized as a tobacco hazard prior to the twentieth century. The disease must surely have existed, even among the natives of the Americas, but it was difficult to diagnose before the invention of X-rays (in the 1890s) and bronchoscopy, and could easily have been mistaken for tuberculosis or some other lung ailment. The disease cannot have been very common, however, because people were not yet routinely inhaling tobacco smoke (recall that smoke from pipes and cigars was generally not inhaled). Since inhalation was rare—because cigarettes were not yet in wide use—the diseases caused by inhalation were also rare. Indeed, the idea that tobacco might be causing lung cancer does not appear in any known medical text until 1898—and only in Germany. And even here the (mistaken) suspicion was that tobacco workers were contracting the

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[42] American Tobacco, "Improving the Taste and Character of Cigarette Tobacco with a View to Removing Irritants and Producing A Light Smoke: A Chapter in Laboratory Research," 1935, http://legacy.library.ucsf.edu/tid/isa95a00.

[43] Figures are from the Worldwatch Institute and the U.S. Dept. of Agriculture, equating consumption with production; compare also the chart on page 12 of the *Executive Summary: The Health Consequences of Smoking, A Report of the Surgeon General* (Washington, D.C.: U.S. Govt. Printing Office, 2014), http://www.surgeongeneral.gov/library/reports/50-years-of-progress/exec-summary.pdf.

disease from the inhalation of tobacco *dust* (not smoke!) while at work.[44]

Lung cancer was still rare enough not to cause much worry, however: as late as the 1890s there were only about 140 cases known in published medical literature worldwide. Pulmonary tumors were an extreme rarity. Smoking was on the rise, but there was not yet much appreciation of the fact that it might take 20, 30, or even 40+ years for a tobacco cancer to develop after onset of exposure (this is the so-called "time lag" or "latency").[45] The existence of this "time lag" helps explain why the rapid growth of smoking in the early 1900s did not show up in massive increases in lung cancer until several decades later. Physicians were not yet very familiar with diseases caused by lifetimes of exposure to carcinogens—and the first case-control epidemiological study was not published until 1939, in Germany, by Franz H. Müller at the University of Cologne. Müller here showed that lung cancer was significantly more common in smokers, even after controlling for the fact that smokers and nonsmokers often came from different socioeconomic backgrounds.[46] And it would not be until the 1950s that new methods would combine with this to create a scientific consensus.

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 types of scientific evidence:

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

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44 Hermann Rottmann, *Über primäre Lungencarcinome* (Würzberg: Med. Diss., 1898), pp. 29, 52; and for background, see my *Nazi War on Cancer* (Princeton: Princeton University Press, 1999). Tobacco cancers were first recognized in the lips, mouth, and tongue because these are easily visible, but also because people rarely inhaled tobacco smoke prior to the invention of cigarettes. Tobacco smoke was generally too harsh to inhale, and nicotine was most often absorbed through the lining of the mouth (whether chewed or smoked).

45 See my *Cancer Wars: How Politics Shapes What We Know and Don't Know About Cancer* (New York: Basic Books, 1995), pp. 27-48.

46 Fritz Lickint, "Tabak und Tabakrauch als ätiologischer Factor des Carcinoms," *Zeitschrift für Krebsforschung*, 30 (1929): 349-65; Franz Hermann Müller, "Tabakmissbrauch und Lungencarcinom," *Zeitschrift für Krebsforschung*, 49 (1939): 57-85. *JAMA* in 1939 published an English abstract of Müller's paper (p. 1372).

contract lung cancer as non-smokers.[47] The *New England Journal* in January 1954 observed that the statistical evidence linking smoking to lung cancer was massive, and in November of that year Horace Joules of the British Medical Association affirmed there was "no doubt whatever" that the main cause of lung cancer was "excessive smoking of cigarettes."[48]

Animal experiments showed that tobacco tars (i.e., 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 Graham's studies published in 1953[49] were widely reported and quickly replicated. A report from one secret study, commissioned by Lorillard in 1963, confirmed Gelhorn's published observations of a "cocarcinogenic effect of tobacco tars."[50]

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.[51]

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[47] 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.

[48] See my *Golden Holocaust: Origins of the Cigarette Conspiracy and the Case for Abolition* (Berkeley: University of California Press, 2011), p. 233.

[49] Ernst L. Wynder, Evarts A. Graham and Adele B. Croninger, "Experimental Production of Carcinoma with Cigarette Tar," *Cancer Research*, 13 (1953): 855-66, http://legacy.library.ucsf.edu/tid/jle54c00; and for its impact: Kluger, *Ashes to Ashes*, pp. 162-66, and Stanton Glantz et al., *The Cigarette Papers* (Berkeley: University of California Press, 1996), pp. 33-35.

[50] Bio Research Consultants, Inc., "Final Report: Lorillard Study C-131," March 15, 1963, https://www.industrydocuments.ucsf.edu/docs/pnyn0126.

[51] A. C. Hilding, "On Cigarette Smoking, Bronchial Carcinoma and Ciliary Action," *New England Journal of Medicine*, 254 (1956): 1155-60, http://legacy.library.ucsf.edu/tid/iqc74e00; Oscar Auerbach et al., "The Anatomical Approach to the Study of Smoking and Bronchogenic Carcinoma," *Cancer*, 9 (1956): 8376-83, http://legacy.library.ucsf.edu/tid/jxd44e00; 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.

Analytic 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 heavy metals like cadmium and nickel, nitrosamines and, eventually (in the 1960s) the radioactive isotope polonium-210.[52]

To this should be added 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 scars from exposure to poisonous gases during the First World War, all of which at one time or another had been blamed.

Evidence from such widely divergent research traditions—all pointing in the same direction—prompted the emergence of a consensus within the Anglo- American scientific community (in the mid-1950s). 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 Memorial Cancer Center and Sloan Kettering Institute in Manhattan agreed, with *Time* magazine characterizing the cancer link as now proven "Beyond Any Doubt."[53] Endorsements emerged from public health bodies throughout the world, including medical societies in Norway, Sweden, Finland, Denmark, Canada, and the Netherlands, along with Britain's Medical Research Council.[54] This was a momentous discovery; indeed it would be hard to name a more significant discovery in the entire history of medicine and human health.

Also crucial to appreciate, though, is that this was *new knowledge*, a

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[52] Claude E. Teague, Jr., "Survey of Cancer Research, with Emphasis upon Possible Carcinogens from Tobacco," Feb. 2, 1953, http://legacy.library.ucsf.edu/tid/jad76b00; "Report of Progress – Technical Research Department" (B&W), Dec. 24, 1952, http://legacy.library.ucsf.edu/tid/eyt60f00, p. 8. Angel Roffo in Argentina was the first to find polycyclic aromatics in smoke, but by the mid-1950s others were confirming this finding, e.g., A. J. Lindsey, R. L. Cooper, and R. E. Waller; see "Cancer-Producing Chemicals in Smoke of Cigarettes Identified in Britain," *Los Angeles Times*, Nov. 19, 1954, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=fsmf0189.
[53] "Beyond Any Doubt," *Time*, Nov. 30, 1953, pp. 60-63, quoting Dr. Evarts Graham.
[54] Frank M. Strong et al., "Smoking and Health: Joint Report of Study Group on Smoking and Health," *Science*, 125 (1957), pp. 1129-33.

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.

The Persistence of Ignorance

Historians sometimes liken the past to 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. As recently as the 1970s and '80s smoking 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 recall professors smoking in the classrooms at Harvard in the late 1970s.) For the first seven or eight decades of the twentieth century tobacco was a respectable commodity, just as smoking was a dignified habit. In 1960, half the astronauts in training to go into space were smokers of cigarettes. 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 (48 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.[55]

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 any increase in the disease. William Boyd, a much-decorated pathologist at the University of Toronto, in his 1940 book *Diseases of the Respiratory System*, questioned 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

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[55] "Many Doctors Link Smoking and Cancer," *Washington Daily News*, Oct. 26, 1960, http://legacy.library.ucsf.edu/tid/scv02a00. Hospitals and pharmacies as late as the 1960s often had monogrammed ashtrays; in 1964, the Surgeon General of the U.S. Navy had special ashtrays made up for a "Conference of the Surgeon General" held at the National Naval Medical Center in Bethesda.

1949 holding a lit cigarette).[56] As late as the 1950s it was still 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.[57] Indeed in 1949, the editor of *JAMA* summed up the opinion of many physicians by saying that tobacco "may cause little change in the total longevity of large groups."[58] 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.[59]

Psychiatrists pondered whether it was ok to smoke during examination of a patient, and at least one (in 1951) mused "Why not?"[60] Even as late as 1954, the director of the National Cancer Institute (John Heller) was not yet ready to say that smoking caused cancer: "We do not say that smoking is a cause of cancer."[61] American Medical Association President Walter B. Martin that same year said there was no "conclusive evidence" that smoking caused tumors: "I don't think the evidence is great enough in this cigarette-versus-lung-cancer problem to warrant the A.M.A.'s advising people not to smoke."[62] Wilhelm Hueper at the National Cancer

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

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

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

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

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

61 "Transcript of Edward R. Murrow's Second TV Show on 'Cigarettes and Lung Cancer'," June 7, 1955, http://legacy.library.ucsf.edu/tid/gcn36b00.

62 Bob Considine, "To Smoke or Not to Smoke," *Cosmopolitan*, April 1954, http://legacy.library.ucsf.edu/tid/grq34f00. Considine also characterizes cigarettes as "votive lamps to the muse." Cigarettes can in fact cause tuberculosis; that is the conclusion of the 2014 Surgeon General's report.

Institute was another influential skeptic; Hueper in a 1957 deposition claimed that it was "almost inconceivable" that "one single habit factor, such as cigarette smoking, is the main reason for" geographic differences in lung cancer rates.[63] The tobacco industry spent a lot of time trying to amplify and broadcast Hueper's skepticism; they also offered him the well-paying job that Clarence Cook Little eventually took as Scientific Director of the TIRC (when Hueper and several others refused).

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,[64] it becomes difficult for a medical scholar to remain an honest denier of causation. There remain of course some scholarly skeptics—stragglers one might say, but almost all in the pay of the tobacco industry.[65] Scholarly deniers retrench 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."[66]

How was this controversy kept alive?

The 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 was confronted with such dedicated and well-funded resistance. Indeed, a more deadly and consequential resistance would be difficult to

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63 Wilhelm C. Hueper, deposition testimony on behalf of the defense for *Lowe vs. Reyn*olds, May 24, 1957, http://legacy.library.ucsf.edu/tid/vbk79a00, p 17. Hueper also admitted, though, that he didn't know much about the constituents of cigarette smoke.

64 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).

65 Allan M. Brandt, *The Cigarette Century: The Rise, Fall, and Deadly Persistence of the Product that Defined America* (New York: Basic Books, 2007).

66 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," https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=fmdb0013.

imagine. In the mid-1950s, cigarette makers organized a campaign to deny the reality of tobacco harms, utilizing ridicule of science and governmental health authorities, financial support for scientific skeptics, the establishment of myriad and diverse fronts, and a broad campaign to influence the media and popular opinion.

In the tobacco case, we know precisely when the denialist conspiracy began. 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 early phase of this campaign, which centered around an effort to create doubt about the reality of tobacco hazards. 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, utilizing bodies expressly created for this purpose, such as the Tobacco Institute (founded in 1958), the Tobacco Industry Research Committee (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.

How did this scheme work?

For decades, from the mid-1950s into the late 1990s and in certain respects beyond, tobacco manufacturers denied the reality of tobacco hazards and did everything in their power to obstruct efforts to curtail tobacco advertising, to limit governmental regulation, to defeat litigation, to keep ordinary citizens from learning the truth.

A turning point in the industry's own recognition and proof of a hazard is the early 1950s, when efforts were undertaken to find out why cigarettes were causing so much harm; this requires some explanation.

One common theory at this time (early 1950s)—and a topic of intensive research—was that it might be *the paper* rather than *the tobacco* that was causing all this cancer. Cigars and pipes, after all, were not causing such a problem, so perhaps it was the paper wrapper? James Rand's specially purified cellulose paper was thought by some to help reduce this danger, and several tobacco companies explored this as an early form of a "safer cigarette." The American Tobacco Co. investigated this question in

the summer and fall of 1953, through an elaborate collaboration with the Medical College of Virginia and the Ecusta Paper Corporation, and the fall of 1953 had largely exonerated paper as a significant carcinogenic agent. American-funded animal experiments conducted at the Ecusta Paper Corporation found that the tobacco leaf in cigarettes was a far more potent cause of cancer than the paper being used as wrappers, laying the blame squarely on the tobacco.[67] The Ecusta experiments were never reported to the public or to any governmental agency. The same is true of the secret experiments financed by Reynolds into smoking-mouth cancer links.

In the early 1950s, when cigarette manufacturers started worrying about the impact of cancer concerns on cigarette sales,[68] a number of different technical solutions were explored, ranging from filters that were supposed to "selectively" reduce carcinogens to additives (like platinum or palladium) that would catalyze them. A number of different nitrate compounds were explored, for example, to destroy polycyclic aromatic hydrocarbons such as benzpyrene. Efforts were also made to limit the amount of arsenic in cigarette smoke (from the lead arsenates and arsenates used as pesticides), and preparations were made (already in the 1930s) to defend menthol, in the event that a movement should ever arise to criticize that additive. Proposals were also put forward to stop the use of certain known toxic additives—like coumarin, which several companies were using in their commercial cigarettes.[69]

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

[68] On May 15, 1953, Imperial Tobacco (of London) Chairman Robert 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 Robert Sinclair to T. V. Hartnett, May 15, 1953, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=gnnk0141.

[69] K 235 was Imperial Tobacco's secret code for coumarin; R.J. Reynolds's code name for the additive was H-2. Reynolds apparently stopped adding coumarin to its Winston cigarettes in 1963, though the compound continued to be used in other cigarettes. Brown & Williamson was still using coumarin (aka wild vanilla) in the 1980s, despite decades-old suspicions it could be toxic. In 1953, for example, Monsanto wrote to its American Tobacco Company client about "our decision to withdraw Coumarin Monsanto from sales for Food and Flavor uses because of its toxicity. . . . in the concentrations administered to the test animals Coumarin is definitely toxic." See Ray F. Caulk, Manager, Flavors and Condiments Sales, Monsanto, to American Tobacco, July 23,

Filters were also introduced and marketed with such intensity that they quickly became the dominant form of tobacco use—despite zero evidence of providing any health benefit. Lorillard's marketing campaign for Kent, with the "Micronite Filter," was among the more aggressive reassurance campaigns ever deployed by a tobacco company. The 1950s advertising for Kent promised a safer cigarette, which gave smokers "the protection they need." Another part of Lorillard's marketing campaign was to infiltrate the medical profession with Micronite propaganda. Lorillard advertised its new filter gimmick in numerous medical journals, handed out Kent cigarettes and Micronite brochures at medical conferences, and mailed out letters such as the following to physicians all across the country:

> Dear Doctor,
>
> It is a pleasure to draw your attention to a new cigarette recently introduced by P. Lorillard Company and called "Kent". The cigarette contains the remarkable Micronite filter.
>
> This Micronite filter is remarkable because it permits the passage of the satisfying aroma of fine tobacco, which you will observe for yourself in the near future when you receive your gift box of Kent cigarettes. . . . the filter exerts a phenomenal filtering action on the so-called harmful components of the smoke stream. This effect is demonstrated by smoke analysis and also by specific physiological tests on human subjects. We hope that you will take time to read the enclosed folder, which describes these tests and the conclusions of which have real health implications for you and your patients.[70]

The new packaging read:

> KENT
>
> The cigarette with the "Micronite" filter; scientifically the most effective filter ever developed to free cigarette smoke of impurities . . . No other cigarette approaches such a degree of health protection and taste satisfaction.

The Kent Micronite Filter, introduced in 1953, was intended to appease smokers and would-be smokers concerned about the mounting evidence that smoking could cause lung cancer. On September 15, 1964,

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1953, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=gjnk0002.

[70] Harris B. Parmele, "Dear Doctor," March 12, 1952, https://www.industrydocuments.ucsf.edu/docs/ltjk0126.

Lorillard sales director Manuel Yellen wrote to M. J. Cramer, the company's president and CEO, describing the history of Kent's marketing strategy:

> As we are all aware, KENT was marketed as a "safer" cigarette for the smoker who was concerned about smoking and health. In 1956 when an innocent third party (Reader's Digest) created an awareness to the consumer that Kent was the "safest" of all popular filter cigarettes, Lorillard exploited this advantage so that within a short period of two years the KENT volume grew from less than four billion cigarettes to thirty-eight billion annually. Between the years of 1956 and 1960 several competitive brands appeared on the market in an attempt, with substantial advertising budgets, to erase the "KENT image of safety". . . It was a decision of management to immediately fight back, whenever brands competitive to KENT appeared on the scene with hard-biting copy in order to retain the "KENT safety image" and protect Lorillard's "bread-and-butter" brand. I feel we were successful in accomplishing our objective in maintaining the safety image of Kent among consumers sensitive to health.[71]

Lorillard had created an image for Kent as the safe cigarette, while understanding that filters were actually useless in providing any genuine health protection. A 1957 investigation commissioned by the company concluded that "a large number of filters have been evaluated, and it is probably safe to say that filters offer little hope for removing or materially decreasing carcinogenic compounds in cigarette smoke tars."[72]

"Filters" grew from about one percent of the cigarette market in 1950 to over half the market by the end of that decade. Lorillard's 1960 Annual Report boasted that, over the previous year,

> sales of our Kent king-size cigarettes increased sizably and according to authoritative industry analysts, Kent with the Micronite filter was the second biggest-selling filter cigarette in the country in 1960 (and the fifth best-selling cigarette brand of any type).[73]

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[71] Manuel Yellen to M. J. Cramer (President, CEO), "Lorillard Sales Position," Oct. 15, 1964, https://www.industrydocuments.ucsf.edu/docs/rjpm0104, p. 1.
[72] Armour Research Foundation of Illinois, "A Research Investigation to Study the Precursors of Certain Polynuclear-Type Aromatic Hydrocarbons Found in Cigarette Smoke Tars," June 20, 1957, https://www.industrydocuments.ucsf.edu/docs/sxym0104, p. 2.
[73] P. Lorillard Company, *Annual Report*, Dec. 31, 1960,

Menthols were another reassurance gimmick. Menthols had been introduced in the 1930s as a cigarette you were supposed to smoke when you had a cold, with safety being a common theme in ads. Consumers were supposed to "play it safe" by smoking Kools, the first successful menthol, a cigarette Brown & Williamson promoted with ads featuring a penguin sporting a stethoscope.[74] Menthol carried the implication of a medicinal cigarette, and explicit therapeutic claims for the minty additive were common from the 1930s into the 1950s. Explicit reassurances were thereafter replaced by implicit reassurances—by which time menthols were becoming a smoke for everyday use.

Menthol sales skyrocketed in the mid-1950s, following with the discovery, proof, and publicity of deadly harms from smoking (see **Figure 1**). Advertisers by this time were using themes of purity and the refreshing outdoors to sell menthol brands: Bowman Gray at Reynolds, for example, celebrated the "Springtime" marketing theme of Salem in a published review:

> The delightful green of the Salem pack itself suggests the perennial green buds that draw the whole of America outdoors. It suggests gentle waters lapping a shoreline, a breeze permeated with pine scents, the aroma of apple blossoms, and the myrrh of the first roses. In a word, "springtime."[75]

We also know from surveys that many smokers of such cigarettes thought they would be safer. A 1960 study prepared by the William Esty Agency (for Reynolds) found that about two thirds of Salem smokers thought that filtered cigarettes were the "safest" to smoke.[76] Among the 24 brands surveyed, Salem ranked number two (behind Kent) among consumers with a "safety" (vs. taste) orientation.[77] Lawyers working for the industry explained that Salem cigarettes

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https://www.industrydocuments.ucsf.edu/docs/ggwx0129.

[74] For ads featuring the Kool penguin wearing a stethoscope, see http://srita.stanford.edu/.

[75] See Bowman Gray, "Winston and Salem: The Change to Filter Cigarettes" (1969), https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=rzkl0094.

[76] William Esty Co., "National Study of Cigarette Smoking," Aug. 1960, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=klmh0091.

[77] Ibid., pp. 14, 16. Coughs, colds and "irritation" were the principal reasons given for switching to Salems: only one percent of those polled listed the "cancer scare" as a principal reason for switching to Salems (p. 26), suggesting that cancer was not necessarily high on smokers' list of concerns—a fact we know from other surveys at this time; see, for example, Roper's ranking poll from Jan. 1959:

were perceived as safer "due to the presence of menthol and a filter."[78] Philip Morris about this same time (1961) commissioned the Opinion Research Corporation to do a study of smoking behavior and smoker motivation, which found that safety was one of the motivations for choosing a menthol cigarette:

> The image of the menthol cigarette is that of a therapeutic cigarette, i.e., one which would be used to help repair the "damage" done by non-mentholated cigarettes.[79]

And menthols retained this sense of relative safety in subsequent decades. Marketing researchers at Reynolds in 1976, for example, recognized that menthol smokers were more "concerned" about their health than non-menthol smokers, and that menthol itself had a "safer" halo; that's how it was perceived.[80]

Similarly deceptive gimmicks over the years include micropore paper, countless novelties in filter design, king sizing (said to "travel the smoke further"), low tars, lights, milds, ultra-lights, slims, and (most recently) cigarettes advertised as natural, organic, and/or "additive free." None of these reduced harms, though they were all broadly perceived as doing so—which is why they were introduced in the first place: to reassure.

Cigarette makers admitted this internally, that people smoking "light" cigarettes perceived them to be safer. In 1974, for example, James Morgan from Philip Morris (later CEO) admitted that the term "Light" was not one that "means anything in terms of taste."[81] R.J. Reynolds came to similar conclusions. In 1974, in a marketing document reflecting on the fact that consumers were "beginning to be more health conscious than ever before,

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https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=fzgv0106.

78 Jones, Day, Reavis and Pogue (for Reynolds), "Corporate Activity Project," Nov. 17, 1986, http://legacy.library.ucsf.edu/tid/rrx95a00, p. 289. Authors of this report include Paul G. Crist, William E. Marple, Steve Kaczynski, and Thomas Abrams.

79 Opinion Research Corporation (for Philip Morris R&D Dept.), "Smoking Behavior and Smoker Motivation--Their Implications for Packaging," Nov. 1961, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=jkmw0119.

80 For the quote: "Menthol itself has 'safer' halo," see the document titled "Product Direction" from Reynolds' Marketing Research Department, April 21, 1976, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=hsdx0099. This same document talks about the "key demographic target" of a menthol competitor to Kool as being "young, liberal, masculine—with significant Black appeal."

81 Deposition testimony of James J. Morgan, Oct. 15, 1974, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=kypc0099.

and will be even more so as time goes on," marketers working for Reynolds divided cigarettes (as perceived) into three categories: "Least Safe," "Safer," and "Safest." In the "Least Safe" category were brands like Camel and Marlboro, while Winston was perceived as "Safer" and Winston Lights was perceived as "Safest." As Rosenfeld, Sirowitz & Lawson explained to Reynolds: "Smokers of these brands are very concerned about health and quite aware of T&N numbers. Their concern . . . causes them to switch to brands with low T&N numbers." Brown & Williamson's marketing consultants came to similar conclusions in 1977, noting that "Almost all smokers agree that the primary reason for the increasing acceptance of low 'tar' brands is based on the health reassurance they seem to offer."[82]

And smokers were rapidly switching over to such brands. The market share of this purportedly "safest" category had grown by 48 percent from 1970 through 1973, with "Lights" being the principal beneficiary: "the most dramatic evidence of the growing interest in Safer Cigarettes may be seen in the growth of the various Lights/Milds line extension products."[83] People who liked Winston considered it to be (in the words of yet another internal study) a "'safe' cigarette." Winston Lights in particular was positioned as a "feel safe" cigarette: focus groups from 1974 showed that the cigarette's basic appeal was "the possibility of being able to enjoy good taste and at the same time 'feel safe'"; Winston Lights would give smokers "a feeling of safety by moving to a low flavor cigarette . . . without the fear."[84]

An equally important technique used by cigarette makers was to fund scholarly research, nominally on "smoking and health," in order to be able to say "we are studying the problem." Millions and eventually hundreds of millions of dollars were given to scientists all across the U.S. and to over a

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82 Hawkins, McCain & Blumenthal, Inc., "Low 'Tar' Satisfaction: Step 1. Identification of Perceived and Unperceived Consumer Needs," July 25, 1977, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=gkwf0189.

83 Rosenfeld, Sirowitz & Lawson, Inc., for Reynolds, "An Evaluation of the 120mm Market and its Potential for RJR," Nov. 17, 1975, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=xskm0096, pp. 33-35.

84 Consumer Diagnostics, Inc., for William Esty Co., Inc., "Qualitative Consumer Evaluation for Winston Lights Positioning," April 1974, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=zjvk0191. For a history of Winston and Winston Lights design modifications, see G. W. McKenna, "History of Product Changes," Oct. 13, 1983, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=qfpm0095.

hundred different academic institutions as part of this effort. Little of this research, however, had anything to do with "smoking and health." The goal instead was to give the *appearance* of funding honest research, when only rarely did the research ever address whether smoking might cause cancer or any other disease. The philosophy was basically to "research *the disease*" rather than "research *the causes*."[85] Smokers could then be reassured that the companies were acting responsibly, trying to get to the root of a purported smoking and health "controversy"—which existed only because of the industry's refusal to admit the truth. This is explicit in the industry's archives. In 1978, for example, conspiracy executives and lawyers meeting in New York noted how vital the continued funding of research was to the maintenance of the myth of an "open controversy":

> It is extremely important that the industry continue to spend their dollars on research to show that we don't agree that the case against smoking is closed.[86]

One key instrument in the conspiracy was the Tobacco Industry Research Committee (TIRC/CTR), established in 1954 to create the impression that cigarette makers were taking seriously the question of whether smoking caused disease. The CTR funded a great deal of research—over $350 million over a period of some 40-odd years—but only rarely any kind of study 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 ploy. 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."[87] When scholars funded by the industry

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[85] Addison Yeaman to Committee of Counsel, Jan. 19, 1968, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=mgbw0138.

[86] R. B. Seligman to CTR File, "Meeting in New York," Nov. 17, 1978, http://legacy.library.ucsf.edu/tid/tlx27c00.

[87] Geoffrey F. Todd, "A Record of Discussions in U.S.A. and Canada" (reporting confidentially to the Chairman of BAT), Dec. 2, 1971, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=tfpv0223. Other arms or instruments of the conspiracy include the Tobacco Institute, Hill & Knowlton, the Tobacco Merchants Association, the AMA-ERF, the Committee of Counsel, the Ad Hoc Committee (of outside counsel), the Industry Technical Committee, the TI Executive Committee, the International Committee on Smoking Issues (ICOSI), the Center for Indoor Air Research (CIAR), the Philip Morris External Research Program, the ETS Consultancy, the TANs, the Tobacco Working Group, and the Associates for Research

did find evidence of significant harm, the pattern was for that research to be cut off.

Freddy Homburger in Cambridge, Massachusetts, for example, had his CTR funding cut after showing (in 1973) that inhaled tobacco smoke caused laryngeal cancer in Golden Syrian hamsters.[88] Homburger was told he would "never get a penny more from CTR" if he published his results; he later testified that his contract was changed mid-study so the CTR "could control publication." Homburger reported that the CTR "didn't want us to call anything cancer" and claimed to have been told that he would "never get a penny more" if his paper were published without deleting the world "cancer." Gary Huber at Harvard also had his funding cut off, after cigarette industry lawyers told him he was "getting too close to some things."[89]

For decades, tobacco industry pronouncements on smoking and health, issued either through the TIRC/CTR (established in 1954) or the Tobacco Institute (established in 1958) or the companies themselves or one of their many fronts, were consistently misleading. Newspapers and other media from the 1950s into the 1990s are filled with the industry's denials, often phrased in such a way as to suggest that "more research" was needed to resolve a purported "controversy" about whether cigarettes actually cause cancer. The strategy was clever, insofar as it exploited liberal rhetorics of openness and the need for research: the industry would oppose all efforts to claim that the science was sufficient to conclude that cigarettes cause cancer; the industry would proclaim instead the existence of an "open controversy," and then warn that those who denied the honesty of such a controversy were "closed minded." Or wanting to close off research. This was "the open-minded approach" advocated by the industry for so many decades.

As part of this scheme, calls for "more research" often appeared in the

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into the Science of Enjoyment (ARISE), inter alia.

[88] See my *Golden Holocaust*, p. 265.

[89] See Gary Huber's deposition testimony for *Texas v. American Tobacco*, Sept. 20, 1997, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=kthl0001, pp. 49-50. The lawyers who warned Huber included Lee Stanford from Shook, Hardy & Bacon, Ernest Pepples from Brown & Williamson, and Arthur Stevens from Lorillard. When subpoenaed to testify for the State of Texas, Huber was again contacted by industry lawyers (from Jones Day and Shook Hardy), who advised him to "keep the faith, hold the line." He later testified that this caused him to fear for his safety and the safety of his family (ibid., pp. 99-102).

industry's press releases and public statements. Much of the industry's rhetoric was highly lawyered: there was much talk of there being "no proof" or "no real proof" of harm, that the evidence was "merely statistical" or that results from animal tests could not be extrapolated to humans.[90] To this was eventually added an elaborate rhetoric of "adult choice" and "legal product"; tobacco harms were said to be "common knowledge" and eventually "old news."

This new strategy of claiming "common knowledge" (or "universal awareness") was first used in the mid-1960s to weaken warnings on the packs of cigarettes. William Kloepfer, vice president for public relations at the Tobacco Institute, in 1969 testified before the House Committee on Interstate and Foreign Commerce that there was no need for a warning, since the public was already "adequately alerted" about the existence of a "possible hazard":

> From published material readily available to this Committee, no one can challenge that there is complete awareness by the American public—young and old alike—of the smoking and health controversy—complete cognizance of the caution that cigarette smoking may be a hazard to the smoker's health—and a deep-rooted conviction that smoking is a real hazard.[91]

Kloepfer went on to cite, out of context, remarks by Daniel Horn, director of the National Clearinghouse for Smoking and Health, who in November 1968 said that:

> You could stand on a rooftop and shout "Smoking is dangerous" at the top of your lungs and you would not be telling anyone anything they did not already know.[92]

Horn's "rooftop" remark was cited as part of an effort to thwart efforts to strengthen warnings about the hazards of smoking. Kloepfer in his 1969 remarks mentioned 625.4 million "exposures" to public health service

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90 For examples, see my *Golden Holocaust*, pp. 253-304.

91 Statement of William Kloepfer, Jr., before the House Committee on Interstate and Foreign Commerce, April 24, 1969, http://legacy.library.ucsf.edu/tid/mul10j00, pp. 673-86.

92 Ibid. Horn didn't say that Americans had a deep or sophisticated understanding of the hazards of cigarette smoking. As discussed elsewhere in this report, many Americans underestimate the health risks of smoking even today.

announcements on television, from which he concluded that

> there is among the American public, including every youngster who can read or listen, a thorough awareness that smoking may be a hazard to health. That is true despite the scientific dispute as to the medical facts, and the insistence of eminent scientists upon 'may be,' rather than 'is' as a fair and factual representation of medical knowledge as distinguished from statistical association.[93]

From the Tobacco Institute's point of view the public had been adequately warned or indeed over-warned, so nothing would be gained by placing yet another scary message on postal trucks. Indeed, the warning was not even true, according to Kloepfer et al. and other leading industry spokesmen,[94] because it was based on faulty statistics.

Cigarette makers were consistent in this message that there was no need to warn the public; indeed, they ridiculed the public health community for trying to do so. In countless appearances by the Tobacco Institute on broadcast media, public health advocates were ridiculed as part of a "health lobby" bent on an "anti-tobacco crusade."[95] Public health advocates were labeled "shower adjusters" and "anti-smoking crusaders," and Tobacco Institute VP William Kloepfer characterized the industry's foes as suffering from "fanaticism, militancy, stridency, free-floating hostility and unbridled rescue fantasies."[96] This was an oft-heard message from the industry, that anyone trying to limit cigarette use was some kind of freedom-hating puritanical zealot—in the 1980s and '90s there was even talk of "nico-Nazis" and a "tobacco Taliban." Kloepfer in 1969 talked

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93 Statement of William Kloepfer, Jr., before the House Committee on Interstate and Foreign Commerce, April 24, 1969, http://legacy.library.ucsf.edu/tid/mul10j00, pp. 673-86.

94 A good example is Robert Heimann's "dead wrong" remark in his 1986 deposition for *Horton vs. American* from Dec. 19, 1986. Heiman had served as president of American Tobacco until 1980; see http://legacy.library.ucsf.edu/tid/upi12i00, pp. 96-101.

95 For examples, see my *Golden Holocaust*, pp. 328-29; also Bill Dwyer's sneering rants from his perch at the Tobacco Institute. For an example of the latter, see "Good Morning America" from March 3, 1976: https://archive.org/details/tobacco_qsp91f00, esp. from 3:35 to 5:25.

96 Report by William Kloepfer to the Board of Directors, Tobacco Institute, May 15, 1976, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=jydc0040, p. 5; nearly identical rhetoric can be found in William F. Dwyer's 1978 speech for the College of Tobacco Knowledge, titled "The Cigarette Consumer Controversy," https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=mzwl0004, p. 15.

about "an increasing crescendo of inflammatory insistence" that smoking could harm your health;[97] he also cautioned about the public being subject to a kind of "mass hypnosis" (from anti-cigarette claims).

Tobacco manufacturers also developed numerous marketing gimmicks posing as breakthroughs in cigarette design. This includes toasting, filters, menthols, king sizing, low tars, lights, slims, and milds—and more recently cigarettes advertised as "organic," "natural," or "additive-free"—all of which were offered for "health reassurance" while delivering nothing of the sort. From the industry we often hear the claim that "FTC tar and nicotine numbers" declined significantly from the 1950s into the 1990s, but the reality is that the actual amount of tar delivered into the lungs did not change during this period—because smokers are typically addicted, and can extract however much tar and nicotine they need from a cigarette to satisfy that craving. Cigarette manufacturers developed techniques to manipulate the potency of the nicotine molecule—using ammonia as a free-basing agent, for example, to boost its potency even as claims were being made that some particular brand was lower in tar (or nicotine) than some other brand.[98]

Too often forgotten in historical accounts is the enormous political power of the industry, a power exercised in many different parts of society. While it is true, for example, that some anti-tobacco publications urged especially young people not to smoke—and we find this even in the *Florida Health Notes* from the first two decades of the twentieth century—it is important to realize how exceptional such critiques were. We know, for example, that in many instances magazines and newspapers felt pressure not to publish articles unfriendly to cigarettes, given the substantial dependence of such publications on tobacco advertising revenues.[99] Gloria Steinem, founding editor of *Ms. Magazine* in the United States, lamented this dependence on cigarette advertising as "a kind of prison.[100] We also know that many of the same witnesses who testified for the industry in Congress

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97 Statement of William Kloepfer, Jr., before the House Committee on Interstate and Foreign Commerce, 1969, http://legacy.library.ucsf.edu/tid/uly15f00.

98 See my *Golden Holocaust*, pp. 390-405.

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

100 Gloria Steinem, "Sex, Lies & Advertising," *Ms.*, July-Aug. 1990, cited in https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=fsfj0035.

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 cigarette-cancer link. The Tobacco Institute took pains to ensure that such films would have their intended effect, and at one point actually measured one such film's impact on popular understanding of health risks. In 1973, the Tobacco Institute measured attitudes toward smoking and health before and after watching "Smoking and Health—the Need to Know," and found that watching the film made people significantly less likely to agree that smoking caused lung cancer. The shift was substantial: those expressing themselves in agreement with the Surgeon General (and the general scientific consensus) declined about 17.8 percent after viewing the film.[101]

Crucial to keep in mind is how far the industry's public reassurances were from 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. Imperial Tobacco of Canada's research director, Robert M. Gibb, in 1977 characterized the industry's "not proven" stance as "totally lacking in credibility," adding that BAT's R&D people were comparing such a stance to pronouncements of "The Flat Earth" society.[102]

Cigarette industry insiders also recognized the industry's 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 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

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[101] Anne Duffin to William Kloepfer, June 29, 1973, "Audience Testing of 'Smoking & Health: The Need to Know,'" June 29, 1973, http://legacy.library.ucsf.edu/tid/hew93f00.
[102] Robert M. Gibb (ITL) to Norman Dann (IMASCO), Jan. 1, 1977, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=hjmv0223. The "Flat Earth" society reference is to ICOSI, the International Committee on Smoking Issues, which tobacco industry insiders recognized as essentially a propaganda organ. (It does in fact represent the spread of the formal denialist conspiracy into Europe.) 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" (http://legacy.library.ucsf.edu/tid/vzl63a99).

> 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. . . . The industry has retreated behind impossible demands for "scientific proof."[103]

Countries outside the U.S. often felt pressure from American litigators. Geoffrey Todd at BAT in 1971, for example, reported on how Britain's Tobacco 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.[104]

U.S. manufacturers wanted to guarantee a 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 persuade the T.R.C. "to re-adopt the American 'not proven' position." The Americans were rebuffed, though Todd did note in consolation (in his 1971 report) that T.R.C. operations in Britain had "never actually proved an embarrassment to the 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."[105]

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, representing each of the "big six" companies, including Lorillard.

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[103] Sydney J. Green (BAT), "Cigarette Smoking and Causal Relationships," Oct. 27, 1976, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=lljj0194.
[104] G. F. Todd, "A Record of Discussions in U.S.A. and Canada, November-December 1971," Dec. 2, 1971, https://industrydocument.library.ucsf.edu/tobacco/docs/#id=tfpv0223.
[105] Ibid., pp. 3 and 9.

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 more formidable 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.[106]

We should not underestimate the gravity of this situation: 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. The net effect was a corruption of popular knowledge and consumer expectations. The "not proven" claim was a contrivance intended to allow tobacco manufacturers to keep on selling cigarettes—and for a time at least this worked.

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The "main issue" for tobacco harm 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 not forget, however, that the industry denied *every*

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[106] 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 Joseph F. Cullman, III, had taken over as Chairman of the 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). The Committee of Counsel governed all matters of smoking and health, including CTR policy; for an organization chart from 1968 (by B&W's Addison Yeaman), see http://legacy.library.ucsf.edu/tid/pos76b00.

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:

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."[107]
2. Tobacco manufacturers denied—and still today deny—having ever marketed to youth, contradicting the long trail of documents revealing such efforts. In some surveys, children as young as ten were asked about their smoking behavior. (We shall return to youth marketing in a separate section).
3. Cigarette manufacturers 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, primarily through denialist organizations such as the Center for Indoor Air Research, the ETS Consultants Program, ARISE and ICOSI, the 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

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[107] Cullman's remarks during his 1971 interview with "Face the Nation" can be found at: http://www.youtube.com/watch?v=VpwcF3Malj8. Smoking during pregnancy at this time was not universally condemned: Laury Oaks in her *Smoking and Pregnancy* shows that until the late 1970s, physicians were not generally opposed to pregnant women smoking in moderation: "Until the late 1970s, pregnancy advice mainly promoted the idea that smoking in moderation was acceptable, although quitting was most desirable" (p. 66). Physicians sometimes even argued that quitting smoking was worse than continuing, because the newly non-smoking mother would gain weight. See Laury Oaks, *Smoking and Pregnancy*: *The Politics of Fetal Protection* (New Brunswick: Rutgers UP, 2001).

be made about the aggregate of published evidence showing no real effect.[108]

4. Cigarette makers also denied the reality of nicotine addiction, typically by trivializing it as purely a matter of semantics. This tactic is not so common prior to the 1980s, as there was not yet even a finding from the Surgeon General that nicotine was addictive. Tobacco manufacturers would eventually develop numerous ways to trivialize nicotine addiction, comparing it to jogging, watching TV, or eating chocolate. The corollary claim was 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."[109] Addiction was purely a matter of semantics, by this logic, and if doctors had come to agree that smoking is addictive, this was 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?[110]

5. As late as 1997, the industry's official position remained essentially denialist on all matters of tobacco and health. Admissions of causality would only come in the new millennium, and even today there is no admission that millions of Americans have died from smoking cigarettes, or that the industry for decades

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[108] 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.
[109] James J. Morgan, deposition testimony in *Broin v. Philip Morris*, April 17, 1997, http://legacy.library.ucsf.edu/tid/uah46b00, p. 78.
[110] Sharon Boyse (BAT), letter to *The Daily Telegraph*, June 29, 1994, http://legacy.library.ucsf.edu/tid/qyl24a99; compare also "Depending on Nicotine?" *BAT Bulletin*, Nov. 1994, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=qzcm0197.

lied to the public, or that low tar numbers and the branding of certain cigarettes as "lights" were deceptive, or that the companies have deliberately marketed to kids, etc.

6. The industry sought to blame the rise in lung cancer and other respiratory maladies on factors other than cigarettes, such as environmental pollution ("alternative causation").

Tobacco executives were sometimes explicit about their efforts to foment ignorance—in their internal correspondence. Often 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,[111] but there are others.

Cigarette makers 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 (especially from the 1960s on). 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 "Unables" outnumbered "Steady Smokers" by a significant margin.[112] Robert Bexon at ITL in the 1980s knew that most smokers wished they could stop; he was emphatic on this point, reasoning that continued prosperity of the tobacco trade depended on the addictive properties of cigarettes:

> If our product was not addictive we would not sell a cigarette next week *in spite of* these positive psychological attributes.[113]

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[111] John W. Burgard to Robert A. Pittman et al., "Smoking and Health Proposal," Aug. 21, 1969, http://legacy.library.ucsf.edu/tid/zqy56b00 and http://legacy.library.ucsf.edu/tid/pzi66b00.

[112] Eastman Chemical Products, "1969 Survey of Cigarette Smoking: Behavior and Attitudes, vol. 1," 1969, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=fjvg0129, p. 12.

[113] Robert L. Bexon to ITL President Wilmat Tennyson and W. Sanders, "File Viking," 1985, p. 2. (emphasis in original), https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=tzfb0223.

Bexon compared smokers not just to drinkers but *to alcoholics*: "Like alcoholics, smokers realize that they will always be smokers and can always fall off the wagon."[114] Claude Teague in the United States developed very similar views, confiding in a 1972 memo that "we cannot ever be comfortable selling a product which most of our customers would stop using if they could." He also noted that "if the exit gate from our market should suddenly open, we could be out of business almost overnight."[115]

All of the companies knew that most smokers wanted to quit, and developed tools to explore the minimum nicotine required to keep smokers smoking—to avoid what was sometimes referred to as "weaning" smokers from their nicotine habit.[116] Lorillard recognized that cigarette satisfaction was "almost totally related to nicotine intake";[117] the goal of Lorillard's RT Task Force (in 1980) was therefore to determine "the minimum level of nicotine that will allow continued smoking."[118] Reynolds in 1971 listed as an item for future research: "Habituating level of nicotine (How low can we go?),"[119] and a 1982 BAT report on "Smoking Behaviour" cautioned that: "If delivery levels are reduced too quickly or eventually to a level which is so low that the nicotine is below the threshold of pharmacological activity then it is possible that the smoking habit would be rejected by a large number of smokers."[120] Ronald A. Tamol at Philip Morris, the process engineer who helped that company developed its reconstituted tobacco sheet, in 1965 commented on the need to determine the "minimum nicotine

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114 Ibid. In 1997 Bexon was hired by Brown & Williamson, makers of Kool, Viceroy and Raleigh cigarettes, as Senior Vice President for Marketing and Sales, where he worked to help fulfill BAT's goal of becoming "the No. 1 tobacco company in the world."

115 Claude E. Teague, Jr., to G. R. Di Marco, "Nordine Study," Dec. 1, 1982, http://legacy.library.ucsf.edu/tid/tjf76b00.

116 Benito Vila (Lorillard) on Nov. 3, 1977, wrote to Richard E. Smith, outlining directions for future product development: "I don't know of any smoker who at some point hasn't wished he didn't smoke. If we could offer an acceptable alternative for providing nicotine, I am 100 percent sure we would have a gigantic brand," http://industrydocuments.library.ucsf.edu/tobacco/docs/gqcj0045, p.1.

117 Harry J. Minnemeyer (Lorillard) to A. W. Spears, "Present Status of the Nicotine Enrichment Project," April 13, 1977. https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=jzmn0189,

118 Richard E. Smith to Alexander Spears et al., Feb. 13, 1980, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=lsln0189.

119 A. H. Laurene to Murray Senkus, "RE: Possible IBT Projects," May 24, 1971, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=qqhn0093.

120 BATCo, "Smoking Behaviour," 1982, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=kqyd0203.

req'd to keep normal smokers 'hooked.'"[121]

Internal Agnotology and "Third Party" Denialism

One interesting aspect of cigarette-science denialism is the industry's *lying to itself*, by which I mean its own employees: cigarette makers 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 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).[122] R.J. Reynolds included denialist messaging in its internal corporate newsletters and in lectures and brochures designed for sales personnel and staff.[123] 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."

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121 Ronald A. Tamol laboratory notes, Feb. 1, 1965, http://legacy.library.ucsf.edu/tid/rrc76b00. In this same document Tamol talks about a "threshold level" of tpm. The word after "minimum nicotine" is hard to read, but Tamol in his July 12, 1996, deposition for *Castano* identified the word as "required"; see http://legacy.library.ucsf.edu/tid/isr07a00, pp. 104, 113, and 119. The same lettering appears at: http://legacy.library.ucsf.edu/tid/esc76b00.

122 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.

123 Numerous examples are included in my *Golden Holocaust*, pp. 292-97.

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."[124]

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- 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 . . . ."[125]

In Canada, we have examples of internal agnotology[126] 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 "[d]espite 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.

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124 BAT Co., "Employee Handbook on Smoking and Health," Jan. 19, 1981, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=kplc0200.

125 Rothmans International Tobacco (UK) Limited, "Tobacco Issues: The Company's View," Feb. 1990, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=hfwb0223.

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

ITL was here feeding "junk science" to its employees, in an effort to enforce the denialist party line.[127] 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,[128] 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, along with 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 do not deny that smoking is harmful; we simply believe that science has not yet proven whether it is or not."[129]

Tobacco manufacturers had already realized by the 1950s that claims of this sort were more convincing when coming from (seemingly) disinterested "third parties"; efforts were therefore made to have denials come from authorities who could ventriloquize the industry, typically for a sizeable fee. That was one reason research at so many universities was funded: CTR Special Projects were granted to scientists who would deconstruct one or another aspect of the "cigarette hypothesis," for example, and CTR funding was used as a kind of farm to generate a "stable of experts" for use in litigation.[130] Experts of this sort could then be trotted forth as "independent," without their 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."[131] Many

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127 Hill and Knowlton (for ITL), "Suggested Lead-In Copy Related to Health Factor," March 4, 1969, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=hycb0223.

128 Rob Cunningham, *Smoke and Mirrors: The Canadian Tobacco War* (Ottawa: IDRC Press, 1996), p. 153.

129 BAT "Smoking Issues: Claims and Responses," circa 1991, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=mtfb0194.

130 The "stable of experts" metaphor for witness development is found in Jones, Day, Reavis and Pogue (for Reynolds), "Corporate Activity Project," Nov. 17, 1986, http://legacy.library.ucsf.edu/tid/rrx95a00, p. 327.

131 Gladys Kessler, "Amended Final Opinion" in *USA v. Philip Morris et al.,* Sept. 8,

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 the January 1968 issue of *True* magazine, the most popular men's magazine of its time, with a circulation of over 3 million copies. A sportswriter by the name of Stanley Frank published an article therein, asking (in the subtitle) "Are cigarettes really 'hazardous to our health' like the package says? Nobody knows." Frank cited 14 medical and scientific authorities in support of his concluding paragraph, insisting that "all we can say for sure is that the cause of cancer is not known and that there is absolutely no proof that smoking causes human cancer."[132] Two months later, a very similar article titled "Cigaret Cancer Link is Bunk" appeared in the *National Enquirer*, this time under the authorship of a certain (fictional) "Charles Golden."[133] Criticism of the Frank piece began immediately after its publication, especially after a *Wall Street Journal* investigation found that Frank and Golden were one and the very same person. It also turned out that the Tobacco Institute (via the Tiderock Corporation) had paid to have its propaganda placed in both publications—and Frank had started working for Hill & Knowlton by the time the first piece had appeared. The crucial point, however, is that among the 14 authorities cited by Frank in defense of his "nobody knows" claim, 13 had been paid by the tobacco industry. None of this was disclosed in the article, making it seem as if there really was an honest controversy. A perfect example of the industry's "third party" deception. As a result of this embarrassment, Hill & Knowlton resigned from its Tobacco Institute account—and it could well be that one reason John Hill preserved and eventually released many of his crucial papers documenting the 1953 conspiracy was his sense of betrayal at the hands of Big Tobacco.

2006, http://www.usdoj.gov/civil/cases/tobacco2/amended%20opinion.pdf, pp. 1330-41.

[132] Stanley Frank, "To Smoke or Not to Smoke—That is Still the Question," *True*, Jan. 15, 1968, http://legacy.library.ucsf.edu/tid/xso12i00. Frank's article was part of a larger Tiderock effort—Project Lighthouse, funded by Brown & Williamson—to cast doubt on smoking-disease links. John W. Burgard was the point man for Brown & Williamson, with Rosser Reeves acting for Tiderock; see http://legacy.library.ucsf.edu/tid/txe24f00.

[133] Charles Golden, "Cancer Link is Bunk," *National Enquirer*, March 7, 1968. The *National Enquirer* had earlier published an article making this (bogus) claim on its front cover: "Cancer Warning! Eating a 1 lb. Charcoal-Broiled Steak Is Same as Smoking 3000 Cigarettes," citing research by William Lijinsky; see the issue from Oct. 22, 1967, p. 8, http://legacy.library.ucsf.edu/tid/gxg00c00.

Another notable example of using "third party" tactics 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 exposure to secondhand smoke, and by the mid-1980s this link was starting 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.[134] Cigarette makers saw this as a serious threat to their business: it was one thing for smokers to be killing themselves, but quite another to be killing non-smoking spouses, babies, bystanders, colleagues in the workplace, and other "innocents." The new science of secondhand smoke threatened to undermine the central ideological bulwark of the industry, that smoking was a purely voluntary act and an "adult choice."[135]

The industry responded by trying to stake out the high ground of freedom, recasting the "right to smoke" as much like the right to free speech. But they also attacked the science. Following Hirayama's publication, for example, the Tobacco Institute launched a media campaign to discredit his research, organizing critiques in print media but also on radio and on television. Attacks of this sort appeared all over the U.S.[136]

Massive efforts were also organized to undermine the epidemiology implicating secondhand smoke in causing harm. Compliant 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

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[134] Takeshi Hirayama, "Non-smoking Wives of Heavy Smokers Have a Higher Risk of Lung Cancer: A Study from Japan," *British Medical Journal*, 282 (1981), pp. 183–85; D. Trichopoulos et al., "Lung Cancer and Passive Smoking," *International Journal of Cancer*, 27 (1981), pp. 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).
[135] Brandt, *Cigarette Century*, pp. 279-315.
[136] The Tobacco Institute, Public Relations Department, "The Hirayama Controversy; an Analysis of Media Activity June 15 – July 31, 1981," Aug. 1981, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=gfcm0043, esp. Bates TI10150732 and TI10150684.

institutions (or "think tanks"). In 1989 alone these consultants were sent to three scientific conferences, published 43 papers and three books in seven languages, gave over 1,100 media interviews, and signed ten affidavits in litigation—all denying any reality to harms from secondhand smoke.

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.[137]

The strategy was simple, if costly and nefarious: if you don't like the science, generate some of your own.

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The tobacco industry's orchestrated campaign of deception involved many different elements: misrepresentations to the public and before governmental bodies; a calculated use of "third party" experts to disguise the fact that cigarette-friendly opinions have originated from the industry; research funded to create the appearance of caring about the safety of one's products; ridicule of scholarly and public health authorities trying to protect the public; and the marketing and sale of products with implicit assurances of safety, when the manufacturers knew such claims were untrue.

Central to many of the industry's public statements regarding cancer was this stress upon a purported need for "more research" given the merely

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[137] John P. Rupp (Covington and Burling), "Asia ETS Project: Status Report," Sept. 27, 1989, http://legacy.library.ucsf.edu/tid/ffy76b00; and for expenses and fees, see https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=gknx0146. And for background: Monique E. Muggli, Richard D. Hurt, and D. Douglas Blanke, "Science for Hire: A Tobacco Industry Strategy to Influence Public Opinion on Secondhand Smoke," *Nicotine & Tobacco Research*, 5 (2003), pp. 303-14.

"statistical" nature of the link between smoking and cancer. The claim 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 perennial refrain that assertions of harms from smoking were based on "emotional propaganda," "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; is there any truth to such claims?

What can we say about the growth and obstruction of popular knowledge?

Popular Knowledge and Ignorance of Harms

Cigarette manufacturers did not publicly admit that tobacco caused lung cancer or heart disease or any other deadly malady until the close of the twentieth century. Prior to this time, in fact, they vigorously denied such links. How did this impact popular knowledge? What do scientific surveys reveal about what Americans knew about the hazards of smoking?

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

1. Prior to the 1960s most Americans 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 Americans 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, with the gap growing significantly after the 1960s (when the industry started targeting "the less educated."[138]

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138 On targeting the "less educated," see the Reynolds document "Less-Educated: Today's Trend Tomorrow's Market???," 1985,

4. Smokers have generally been less convinced of the hazards of smoking than non-smokers—by a significant margin. They are also more vulnerable to reassurances, grasping at straws to rationalize their smoking.
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 Americans, 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 people 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

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https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=pqlj0095. Discount brands were one way to target the poor and less educated. Philip Morris launched its Basic brand in 1992, for example, recognizing that most users (59 %) would be "working class" with "no college"; see "1998 PMI Marketing Training Program," July 23, 1998, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=lzbp0043. Philip Morris understood that its target audience would be "Average everyday folks like me . . . hard-working, unpretentious." For more on the brand history of Basic, see Leo Burnett for Linda Hadel (Philip Morris), "The Best Things in Life Are Basic," Jan. 24, 2000, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=qtbh0165.

onwards, albeit neither so fast nor as complete as the industry's experts would have us believe.[139] And while it is true that the majority of Americans today will recognize that smoking causes life-threatening illness, it would be wrong to project our current understanding into the distant past.[140]

Understanding polling also requires that we appreciate that the answers we get depends very much on 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 are often 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 also have 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 of smoking 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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139 For surveys of popular knowledge of tobacco 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), https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=tycl0056, 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 E. Warner, *Selling Smoke: Cigarette Advertising and Public Health* (Washington, D.C.: American Public Health Association, 1986), https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=mhhx0149.

140 In 1954, the *Santa Fe New Mexican* reported on six people interviewed about an AMA report linking cigarettes to cancer; each of the six expressed doubts as to the dangers of smoking; see "What Do You Think? Have You Cut Down Smoking Since the AMA Cancer Report?" *Santa Fe New Mexican*, June 27, 1954, https://www.industrydocuments.ucsf.edu/docs/#id=mrhf0118.

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, a 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.[141]

- 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.[142]

- In 1965, a Louis Harris poll found that when 1,250 Americans were asked whether smoking was a "major" or a "minor" cause of lung cancer, only 20 percent of the heavy smokers said "major cause."[143]

- 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.[144]

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[141] George H. Gallup, *The Gallup Poll: Public Opinion 1935-71*, vol. 2 (New York: Random House, 1972), https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=tpvp0062.
[142] 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, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=lzdy0138.
[143] Louis Harris, "The Harris Survey," *Washington Post*, Feb. 1, 1965. The best survey of polls from the 1950s and early 1960s is the Gallup Organization's "Trends in Public Attitudes on the Possibility of a Health Hazard in Cigarette Smoking," March 1964, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=ntbm0104, p. R-4.
[144] Daniel Horn, "Current Smoking among Teenagers," March 25, 1968,

- 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."[145]

Surveys cannot always of course be taken at face value; when people agree to a pollster asking (yes or no?) 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 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 used this story to suggest the gullibility of the public,[146] 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 concern about the threats posed by smoking. In 1958, for example, a poll by Elmo Roper and Associates revealed the public's "shocking lack of awareness" of the magnitude of health harms from smoking. When asked to complete the sentence, "The trouble with cigarettes is that they . . . ," only one percent volunteered "could cause cancer." And only 3 percent offered that cigarettes could be "harmful to your lungs, wind, breath." A "Highlights" section of the report concluded that while cigarettes were regarded as "bad for you to a greater extent than the other products we asked about" (air pollution,

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https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=nkmf0115.

145 Martin Oldman, "Cigarette Smoking, Health, and Dissonance (Project Libra)," Oct. 18, 1979, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=hnlk0134, pp. 80-82.

146 "Trace Outbreak of Diphesmia to Anti-Smoking Absurdities," *United States Tobacco Journal*, Nov. 5, 1970, http://legacy.library.ucsf.edu/tid/agx09d00.

climbing out of a bathtub, etc.) there was "surprisingly little concern" about cigarettes. What little concern there was seemed "largely directed at the avoidance of throat irritation and the consequent search for mildness" in the form of filters.[147]

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 publicized cancers, such as cancers of the kidney, bladder,[148] larynx or esophagus. This has 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.[149] If knowledge of smoking causing kidney cancer was not even "common" enough to reach a leading physician at Canada's Kidney Foundation, how can we expect non-specialists to have had such knowledge?

Cigarette makers often claim that knowledge of cigarette hazards goes back many decades, prior even to the 1940s and 1950s. The reality is that there were lots of scholars—even into the 1960s and sometimes later—who did not believe it had been proven that cigarettes cause cancer. And publicly made such claims on behalf of distinguished scholarly societies. Here are some examples of late ignorance (laggards, one could say, slow to recognize the science):

- On May 29, 1948, Edward D. Churchill, a Professor of Surgery at Harvard and Chief of Surgical Services at Massachusetts General Hospital, published an article in *JAMA* stating with regard to lung cancer that "Nothing is known about the cause of the disease that can be translated into effective preventive measures." There was thus "no factual evidence on which

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147 Elmo Roper and Associates, "A Study of Attitudes toward Cigarette Smoking and Different Types of Cigarettes, Volume I" (prepared for Philip Morris), Jan. 1959, http://legacy.library.ucsf.edu/tid/ynl02a00.

148 Cigarettes cause about half of all cancers of the bladder in American women; see http://www.nih.gov/researchmatters/august2011/08292011cancer.htm.

149 Kim McLeod, "Doctor Admits He Made Error," *Edmonton Journal*, Jan. 13, 1987, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=lqgb0223.

advice to give up smoking" could be based.[150] A *JAMA* editorial from that same year stated there was no "preponderance of evidence that would indicate the abolition of the use of tobacco as a substance contrary to the public health."[151]

- In 1953 Wilhelm Hueper, head of the Environmental Cancer Section at the National Cancer Institute, wrote in the *Rhode Island Medical Journal* that if smoking plays a role in the production of lung cancer "it seems to be a minor one."[152]
- In 1953 the Metropolitan Life Insurance Company was not yet ready to accept the cigarette-lung cancer link, characterizing the role of smoking in the rise of cancer as "still far from conclusive."[153]
- In 1953 Raymond Passey, Director of Cancer Research at the University of Leeds and a Fellow of the Royal Society of Medicine, wrote that while smoking might eventually be proven to cause cancer, "at the moment we do not know" and "let us be sure of our evidence before we scare the public."[154]
- In 1953 four scholars at the National Cancer Institute questioned the cigarette-cancer link, calling its etiological significance "unestablished."[155] NCI director John Heller also described the link as not yet proven "to our satisfaction."[156]
- On Dec. 17, 1953, Dr. Walter B. Martin, President-Elect of the

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150 Edward D. Churchill, M.D., "Primary Carcinoma of the Lung," *JAMA*, May 29, 1948, pp. 455-61, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=jqkg0055.

151 "The Advertising of Cigarettes" (Editorial), *JAMA*, Oct. 30, 1948, p. 652, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=kklc0115

152 Wilhelm C. Hueper, M.D., "Air Pollution and Cancer of the Lung," *Rhode Island Medical Journal*, 36 (1953): 24-30, 34-36, 52, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=ggxw0077.

153 Metropolitan Life Insurance Company, *Statistical Bulletin*, 34 (Feb. 1953), p. 3. This passage is often cited in cigarette industry's propaganda, including the TIRC's first "white paper"; see "A Scientific Perspective on the Cigarette Controversy," April 1954, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=zmfy0059,

154 Raymond D. Passey, M.D., "Smoking and Lung Cancer," *British Medical Journal*, Feb. 14, 1953, p. 399, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=jydh0067.

155 D. A. Sadowsky, A. G. L Gilliam, and J. Cornfield, "The Statistical Association Between Smoking and Carcinoma of the Lung," *JNCI*, 13 (1953): 1237-58.

156 Heller is cited in a *New York Times* interview from April 20, 1953, cited in TIRC, "A Scientific Perspective on the Cigarette Controversy," April 1954, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=zmfy0059, p. 12.

AMA, on national television claimed there had been "no positive proof" of the connection between smoking and cancer. His assessment: "I don't think the evidence is convincing."[157]

- In June of 1954, the American College of Chest Physicians doubted the sufficiency of the evidence linking cigarettes to cancer: "While many theories have been advanced, further work must be carried out before any single agent or agents can be definitely implicated."[158]
- In 1955 Elmer Hess, President-Elect of the American Medical Association, on Edward R. Murrow's nationally-broadcast "See it Now" confessed: "I've been a smoker all my life and I can't see where it's done me a great deal of harm."[159] On that same show Wilhelm Hueper reaffirmed his skepticism: "I do not believe that cigarette smoking is one of the major causes of cancer of the lung."[160]
- In 1955, R. D. Passey from the Institute of Cancer Research in London maintained that while there were carcinogens in smoke, "the quantities are possibly insufficient to induce cancer."[161]
- In 1956 Dr. Richard H. Overholt, one of the nation's foremost thoracic surgeons, praised the tobacco industry for showing "concern and sincere interest" in the cancer problem. Overholt also commented that with filters, "about one-third of the nicotine and coal-tar content is filtered out."[162]

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157 "Answers for Americans," ABC Network broadcast reported in Hill and Knowlton, "The Weight of Scientific Research Still Says: No Data Prove Theory that Cigarettes Cause Lung Cancer," 1954, "https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=tfmp0042.

158 Hill and Knowlton to TIRC, "Preliminary Report of AMA Convention, San Francisco," June 23, 1954, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=kycm0007.

159 "Transcript of Edward R. Murrow's First TV Show on 'Cigarettes and Lung Cancer'," May 31, 1955, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=qzcn0011.

160 Ibid. p. 3.

161 R. D. Passey to Robert C. Hockett, Feb. 1, 1955, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=mspy0215.

162 "Points to Cancer Link," *Kansas City Times*, March 22, 1956, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=jlgg0028. Overholt in June of 1956 had stated that the cause of cancer of the lung was "unknown"; see his 1960 testimony in *Pritchard v. Liggett*, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=zsmn0132, p. 24.

- In 1957 and 1958, Sir Ronald A. Fisher, Britain's leading statistician, published a series of articles accusing scholars of confusing cause and effect: people with cancer, he proposed, ease their pain by smoking, creating the semblance of a causal relation which, in fact, is a spurious coincidence.[163]
- In 1959 Seymour Farber, President of the American College of Chest Physicians, claimed that "While many theories have been advanced" with regard to what causes lung cancer, it was vital "that further work be carried out before any single agent or agents can be definitely implicated." The College thus "declined, without further research, to pin the increase in lung cancer on smoking."[164] The Board of Regents of the College approved this statement "without dissenting."
- In 1959, *JAMA* editor John H. Talbott wrote that while medical studies revealed a cigarette-cancer relationship, there was much they didn't explain and that "Neither the proponents nor the opponents of the smoking-theory have sufficient evidence to warrant the assumption of an all-or-none authoritative position."[165]
- In 1959, the UPI reported that a group of Birmingham scientists led by Thomas McKeown had found that smoking a pack or more a day "may help health"—by keeping one's blood pressure low.[166]
- In 1960, in a review financed by the National Science Foundation, Dr. Joseph Berkson from the Mayo Clinic found it "very doubtful that smoking causes cancer of the lung."[167]
- Also in 1960, in research funded by the NCI and the American Cancer Society, pathologists Paul Kotin and Hans L. Falk found

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[163] Sir Ronald A. Fisher, *Smoking: The Cancer Controversy* (Edinburgh: Oliver and Boyd, 1959), https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=nxnl0178.
[164] Hill and Knowlton to Members, Tobacco Institute and TI, "Tobacco News Summary," Oct. 19, 1959, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=zycv0023.
[165] "Smoking and Lung Cancer" (editorial by John H. Talbott), *JAMA*, Dec. 12, 1959, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=hmvd0122.
[166] "Heavy Smoking May Help Our Health, Scientists Say," *The Louisville Times*, Sept. 26, 1959, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=zycv0023.
[167] Joseph Berkson, "Smoking and Cancer of the Lung," *Proceedings of the Mayo Clinic*, 35 (1960): 367-85, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=tpcm0178.

the contribution of cigarette smoke to lung cancer "at present incapable of quantitative determination."[168]

- In 1962 Lewis Robbins, Chief of Cancer Control Programs at the Public Health Service, in a *Minnesota Medicine* review found that the evidence "still does not add up to conclusive proof that cigarette smoke causes lung cancer."[169]
- In 1962, the Royal College of Physicians characterized smoking as a habit "most smokers enjoy without injury."[170]
- In 1962 Henry I. Russek, MD, President of the Russek Foundation, wrote that it was "not clear whether tobacco consumption is causally related to coronary atherosclerosis or merely a reflection of augmented psychic stress and personality make-up."[171]
- In 1964 Dr. Milton B. Rosenblatt, reviewing two centuries of medical literature, concluded that the modern rise in the lung cancer was not real but rather "only apparent," an artifact of improved techniques of detection and diagnosis.[172]
- In 1964 Frank L. Horsfall, Jr., Director of the Sloan-Kettering Institute in New York, "publicly expressed his doubt" that smoking causes cancer.[173]
- In 1965, 49 scientific experts testified before the U.S. Senate committee looking into whether labels should be required on cigarette packs; 39 of these 49 claimed there was insufficient proof of a hazard to warrant such a label.[174]

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168 Paul Kotin and Hans L. Falk, "The Role and Action of Environmental Agents in the Pathogenesis of Lung Cancer: II. Cigarette Smoke," Cancer 13 (1960): 250-62, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=nfkg0055.

169 Lewis C. Robbins, MD, "Medical Practice and Lung Cancer," *Minnesota Medicine*, 45 (Jan.-Dec. 1962), p. 135, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=jlgl0223.

170 *Smoking and Health: Summary and Report of The Royal College of Physicians of London* (New York: Pitman Publishing, 1962), https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=gnmw0189, p. 50.

171 Henry I. Russek, "Tobacco Consumption and Coronary Heart Disease," 1962, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=lycd0124.

172 Milton B. Rosenblatt, "Lung Cancer in the 19th Century," *Bulletin of the History of Medicine*, 38 (Sept.-Oct. 1964): 395-425, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=njgh0067

173 James C. Bowling to C. H. Kibbee, "Sloan-Kettering Contributions," Nov. 23, 1964, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=yjyb0040

174 *Cigarette Labeling and Advertising: Hearings before the Committee on Commerce,*

- In 1965 Prof. Louis H. Clerf, a laryngologist at Jefferson Medical College in Philadelphia, when asked by Senator Vance Hartke of Indiana whether only "a handful" of physicians agreed there was "no danger in cigarette smoking," answered "If it was a handful, I would say it is an enormous handful."[175]
- In 1965, *Science Mechanics* published an article naming Lark, Philip Morris, Tempo, and Galaxy "the safest cigarettes."[176]
- In 1966, Torbjörn Lundman concluded from a study of Swedish twins that cigarette smoking "is probably not associated with coronary heart disease."[177]
- In 1967 Dr. Lloyd Mallan, author of *It IS Safe to Smoke*, issued a press release calling it a "misconception" that all physicians agreed with the U.S. Surgeon General. Mallan labeled the link between cigarettes and cancer "an unproved theory" supported only by "private fund-raising health organizations and certain persons in our Government."[178]
- In 1967, the second U.S. Surgeon General's Report concluded it was "not known" whether smoking during pregnancy was "deleterious or not."[179]
- In 1968, Dr. Carl Seltzer from Harvard published an article in *JAMA* disputing any proven causal link between cigarette smoking and coronary heart disease.[180]
- In 1969, American Heart Association president Lewis E. January testified before Congress that while the evidence was

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United States Senate, March 22-25, 29-30, and April 1 and 2, 1965: https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=pjxf0189, p. 335

175 Ibid., p. 335.

176 Lloyd Mallan, "Nervous Smokers Relax! The Lark Filter proved most efficient in reducing the toxicity," 1965, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=fmvy0174.

177 Torbjörn Lundman, "Smoking in Relation to Coronary Heart Disease and Lung Function in Twins," *Acta Medica Scandinavica*, 180 (1966): 1-75, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=rgjl0199, p. 65.

178 "Statement by Lloyd Mallan" (press release), Feb. 28, 1967, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=prmw0000.

179 *The Health Consequences of Smoking: A Public Health Service Review* (Washington, D.C.: PHS, 1967), https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=sgfk0012, p. 187.

180 Carl C. Seltzer, "An Evaluation of the Effect of Smoking on Coronary Heart Disease," *JAMA*, Jan. 15, 1968: 127-34, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=fshv0015

becoming "more and more compelling," an absolute cause and effect relationship between smoking and heart disease "has not been established."[181] Carl Seltzer at this same hearing testified it was "not known whether or not cigarette smoking results in any excess coronary heart disease."[182]

- In 1969 Dr. Milton B. Rosenblatt, president of the Medical Board at New York Doctor's Hospital, testified before the U.S. Congress there was "no valid experimental evidence confirming the smoking-lung cancer theory."[183] U.S. Surgeon General William H. Stewart testified at these same hearings that cigarette smoking was not "physiologically addictive."[184]
- In 1969, in testimony before the U.S. Congress, Dr. Robert H. Browning from the board of the National Tuberculosis and Respiratory Disease Association expressed ignorance about why there was less emphysema in females in males: "We don't really know, sir, whether there is inherent resistance or better lung tissue" in women as compared to men.[185]
- At these same 1969 hearings, Prof. K. Alexander Brownlee from the University of Chicago testified that lung cancer was a genetic disease, having nothing to do with smoking.[186] Dr. Victor Buhler, a former president of the College of American Pathologists, testified that the cause of cancer of the lung was "unknown,"[187] and Hiram T. Langston, president of the American Association of Thoracic Surgeons, compared "preachment" against cigarettes to unfounded beliefs in ghosts, goblins, or "the devil."[188] Dr. Ray Rosenman from the Harold Brunn Institute for Cardiovascular Research in San Francisco testified that diet and personality ("type A") were more

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181 *Cigarette Labeling and Advertising—1969*, Hearings before the Committee on Interstate and Foreign Commerce, House of Representatives (Washington: U.S. Government Printing Office, 1969), *Part I*, April 15 to May 1, 1969, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=kpkw0189, pp. 508-10.
182 Ibid., pp. 532-33.
183 Ibid., p. 140.
184 Ibid., p. 182.
185 Ibid., p. 648.
186 Ibid., pp. 740-68.
187 Ibid., pp. 769-75.
188 Ibid., pp. 788-808. Langston testified that "a considerable number" of his colleagues were equally skeptical.

> important causes of heart disease than smoking,[189] and Duane Carr, a thoracic surgeon from Tennessee, cited data "incompatible with the theory that cigarette smoking causes cancer," a theory put forward by "dedicated zealots."[190] Several other scholars testified there was no justification for the conclusion that smoking causes cancer: the statistician Leo Katz, the twin researcher Rune Cederlof, the pathologist John P. Wyatt, the computer scientist Theodor Sterling, the statistician Darrell Huff, the cancer researcher Arthur Furst, the pathologist R. H. Rigdon, and several others. Several witnesses testified that cigarettes were actually good for you.[191]

Such examples show, contrary to the industry's "common knowledge" or "public awareness" claims, that many influential scholars were slow to accept the deadly harms from smoking. Which makes it easier to understand why so many ordinary Americans underestimated the hazards.

Even today, many Americans are in the dark about some of the less talked about dangers from smoking. Most don't know that smoking can cause stroke, for example, or vascular degeneration requiring amputation, or that most lung cancers prove fatal. Most 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. Most smokers don't know that secondhand smoke shows up in breast milk, or that smoking causes 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.[192] Very few know that cigarette smoke contains the radioactive isotope polonium-210, or that cigarette smoke is the most common way most Americans will be exposed to deadly alpha radiation.

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189 Ibid., pp. 808-48.
190 Ibid., p. 851-52.
191 Ibid., pp. 952-53, 1009.
192 "Project Day – Exploratory Phase in Edmonton," Sept. 6, 1988, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=zsnv0223.

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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, but there are other sources 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 letters express clear ignorance of tobacco hazards. Here are some typical examples:

- In 1965, a man from Ft. Lauderdale wrote to Reynolds, suggesting that the diseases associated with smoking were actually from the germs transferred from the hands of the smoker; so he recommended packing the cigarettes upside down "so people would grab the butt end and place the filter into the mouth without touching or handling it, thus eliminating a source of disease."[193]

- In 1968, a 63-year old man from Saugus, Massachusetts, wrote to Reynolds, confessing that even though he himself had long smoked cigarettes and now had cancer, he nonetheless considered the idea of cigarettes causing cancer to be "a LOTTA HOG WASH."[194]

- In 1971, a Gainesville man wrote to Reynolds, urging the company to investigate whether it was not true that "tobacco is less harmful than butter and/or meat with fat on it?" This man suggested further research that might show that "smoking is related to cancer only where other pollutants abound," meaning that smoking is "of itself, not necessarily dangerous to health." Smoking could even be healthy, given that "the factor most likely to cause a heart attack is tension, and smoking reduces my tension."[195]

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193 Wilbur L. Simms to Reynolds, July 28, 1965, http://legacy.library.ucsf.edu/tid/cxn23a00.

194 Ellsworth H. Peak to Reynolds, "Cancer Research," Oct. 19, 1968, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=yjny0005.

195 O. A. Hamilton to Reynolds, Jan. 8, 1971, http://legacy.library.ucsf.edu/tid/pox79d00.

- In 1986, a seventy-year Camel smoker from Granite Falls, Minnesota, wrote to Reynolds to say that "This idea of smoking being bad for one's health to me is a lot of malarky. . . . I don't think smoking is bad at all."[196]

- In 1985, a Newcastle, Wyoming, man wrote of his view that "drunk driving kills more people than smoking ever did," emphasizing also "how many lives have probably been saved, and most likely prolonged due to smoking when under stress . . . most likely many more than lost due to lung disease!"[197]

- In 1995 a man from Bradenton, Florida, wrote to Reynolds, noting that:

> For some time now I have been a little concerned about this Cigarette smoking and Lung Cancer. I am sure smoking has an effect on the Lungs but, I think it is only a drop in the bucket. . . . Smoking, they say . . . is what causes most Lung problems. I am not so sure. . . . I don't think the Tobacco Companies should bear all the burden when it comes to Lung Problems because there is so much impurities in the air.[198]

- In 1996, Brian Stevens, a distinguished professor of chemistry at the University of South Florida, wrote to the president of R.J. Reynolds, outlining his theory that smokers get cancer not because they smoke, but rather because they are "more likely than non-smokers to be given chest X-rays, either routinely, or as a result of relatively minor respiratory ailments." Professor Stevens pointed out that X-rays can cause cancer, and proposed that this theory might be of use to "undermine current litigation against the tobacco industry."[199]

- In 1997, a Margate, Florida, man wrote to tell Reynolds how

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196 Buckley Riley to Reynolds, Feb. 10, 1986. http://legacy.library.ucsf.edu/tid/det18c00.
197 A. Rex to Reynolds, Dec. 6, 1985, http://legacy.library.ucsf.edu/tid/bet18c00. Reality check: in 2005, according to the U.S. Department of Transportation, 16,885 Americans died from alcohol-related traffic accidents, compared with 440,000 deaths from smoking.
198 Philip W. Conley to Reynolds, Dec. 28, 1995, http://legacy.library.ucsf.edu/tid/iij70d00.
199 Brian Stevens to Andrew J. Schindler, Jan. 23, 1996, http://legacy.library.ucsf.edu/tid/cbb50d00.

inappropriate it was to blame the tobacco industry:

> I started smoking cigars and Lucky Strike cigarettes when I was 14 years of age. I am now 74 years of age and I still smoke cigars, Camel cigarettes and pipe tobacco. I am in excellent health and ride my 21 speed Schwinn bike 15/20 miles every day.[200]

- In 1999, a 54-year old Albuquerque man wrote to the Marketing Dept. of Reynolds, offering his own life story as proof of the relative safety of cigarettes, noting that while he had smoked for many years, his health was "definitely much better than [the] physical fitness of the vast majority of younger non-smokers."[201]

Reynolds responded to most such inquiries—there are many thousands preserved in the archives—by repeating its denialist routine. On October 10, 1966, for example, T. K. Cahill from Reynolds's Public Relations Department wrote to a woman from Palmetto, Florida, who had inquired about cancer and cigarettes:

> Yes, there is much talk today about cancer, but the fact is that cancer was known to afflict the human race hundreds of years before tobacco appeared on the scene. In spite of all the activities and statistical theories we have been hearing so much about, the cold fact is that nobody knows the real cause of cancer in human beings.[202]

Reynolds wrote a similar response to two Gulf Breeze, Florida, children—aged ten and eleven—who had written to the company in June of 1969:

> The tobacco industry is most concerned about the charges being made that smoking is responsible for so many serious diseases . . . Despite all the research going on, medical science has not found any conclusive evidence that an element in tobacco or tobacco smoke causes any human disease. The answers to the many unanswered smoking and health questions—and the true causes of human diseases—can, we believe, be determined by scientific

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200 Walter Same to Steven Goldstone, Aug. 11, 1997, http://legacy.library.ucsf.edu/tid/poa51d00.
201 Josef Dolejs to Reynolds, Dec. 14, 1999, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=ysxk0091
202 T. K. Cahill to Kay Ormund, Oct. 10, 1966, http://legacy.library.ucsf.edu/tid/lga79d00.

> research. Our Company intends, therefore, to continue to support such research until the truth in known.[203]

Virtually identical letters would be sent to Massachusetts residents; here is one sent to a certain Austin Roper of Boston, in 1989:

> Despite all the research going on, the simple and unfortunate fact-is that scientists do not know the cause or causes of the chronic diseases reported to be associated with smoking. The answers to the many unanswered controversies surrounding smoking--and the fundamental causes of the diseases often statistically associated with smoking--we believe can only be determined through much more scientific research. Our company intends, therefore, to continue to support such research in a continuing search for answers.[204]

Not all letters to the company were friendly. In June 1997, for example, a woman from Dundee, Florida, noted that while she had just received a birthday card from the company addressed to her mother, she could not wish her a happy birthday as she had recently "past away from cancer." The daughter didn't want to pass along the company's coupon because she "did not want to be guilty of accessory to murder."[205]

Reynolds typically responded to such letters with sympathy—and denial of responsibility. On March 26, 1976, for example, the Camel-maker wrote this letter to the survivor of a loved one:

> We are deeply sorry to hear of this unfortunate occurrence. However, as to the alleged cause of the illness which befell your father, we believe that there is a misunderstanding.
>
> This Company does not regard itself as being in any way responsible. We firmly believe that cigarettes have been unfairly blamed as a cause of human disease. The proposition that cigarettes are at fault has been so widely accepted as fact by so many otherwise responsible people, and the evidence to the contrary has been so uniformly disregarded, that we cannot blame you and other members of the public for accepting the proposition

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203 C. B. Wood (Reynolds) to Vicki Alexander and Deborah Branch, June 17, 1969, http://legacy.library.ucsf.edu/tid/kkx69d00.
204 Joan F. Cockerham to Austin Roper, July 17, 1989, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=rydn0081.
205 M. Baxter to Reynolds, June 6, 1997, http://legacy.library.ucsf.edu/tid/fto80d00.

> as fact. I do not wish to burden you, especially at this difficult time in your life, with the details of the smoking-and-health controversy. However, on the assumption that you may be interested in our side of the matter, we are enclosing a copy of a booklet entitled "The Cigarette Controversy."[206]

It is important to realize that when Reynolds wrote to these people, the response very often 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.[207]

We only have a minuscule fraction of the entire corpus of letters that must have been sent to the companies, but we still have thousands expressing this same denialist routine. And not a single one (!) ever admitted cancer causation—or any other malady being caused by smoking.

* * * * *

Part of the significance of the popular ignorance illustrated above stems from the fact that most smokers begin smoking in their early teens. 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 has capitalized on it. What can we say about the history of tobacco industry marketing to minors in the American context?

Marketing to Youth

The cigarette industry for decades has reassured the public that it does not market to youth—and still today claims it has never done so in the past.

Despite such public protests, the archival record makes it clear that cigarette makers have long tried to capture what they call the "young" or "youth market." Cigarette makers have many different terms for this market:

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206 T. K. Cahill (Reynolds) to J. T. Accardo, March 26, 1976, http://legacy.library.ucsf.edu/tid/nrz79d00.

207 This exact same passage appears in multiple Reynolds letters to ordinary smokers.

starters, young starters, triers, new triers, learners, new smokers, pre-smokers, novices, rookies, fledglings, first time smokers, the *young adult franchise*, *tomorrow's cigarette business*, and even *replacement smokers*. A search of the tobacco industry's archives for the term "youth market" returns thousands of documents, as does a search for "starters" (15,901 documents), "learners" (1,529 documents), "young smokers" (23,950 documents) and so forth.

Thousands of documents illustrate this interest in selling cigarettes to kids. Teenagers were clearly a prime target for all cigarette manufacturers, a priority reflected in the fact that smoking is more prevalent among people in their early 20s than in any other age group (smoking prevalence steadily declines from that point on). This is one reason cigarette manufacturers have always feared the loss of youth markets for their business as a whole: as the Roper Organization put it in a 1974 report for Philip Morris: "We are not sure that anything can be done to halt a major exodus if one gets going among the young."[208]

Of course the companies have always known how dangerous it would be to give the appearance of trying to capture the youth market, which is why so much lip service has been given to using "older models" in advertisements. In the 1960s, the announced policy of the industry was to run cigarette ads only on those shows with less than a 45 percent youth viewership. Later policies were to place ads in print media where no more than 15 percent of readers would be underage. But there has also been a longstanding recognition within the industry that adult themes could be of interest to kids. Smoking has often been recognized as a form of youth rebellion—"acceptable rebellion" was Reynolds's definition—and the theme of kids starting smoking to try to look and act older has been prominent in a great of industry thinking about marketing. The industry knows that smokers usually experiment with smoking in an effort to look older—and in this sense the very definition of smoking as an "adult habit" implies a certain appeal to kids.

In 1969, for example, in a draft report titled "Why One Smokes," Philip Morris research chief Helmut Wakeham reflects on how:

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[208] Roper Organization (for Philip Morris), "A Study of Smoking Habits among Young Smokers," July 1974, http://legacy.library.ucsf.edu/tid/brp34e00, p. 6.

> Smoking a cigarette for the beginner is a symbolic act. The smoker is telling his world, "This is the kind of person I am . . . I am no longer my mother's child . . . I am tough . . . I am an adventurer . . . I'm not a square."[209]

Wakeham here also notes that once these symbolic motives have subsided, other motives take over: "As the force from the psychological symbolism subsides, the pharmacological effect takes over to sustain the habit."[210] By this time of course the "pharmacological effect" can be quite strong: "Long after adolescent preoccupation with self-image has subsided, the cigarette will even preempt food in times of scarcity on the smoker's priority list."[211]

Recognizing this need to keeping the youth market is one reason cigarette manufacturers have 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). Youthful imagery was also important for how cigarette marketers 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." 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."[212]

In the United States, youth has long been regarded within the industry as a crucial market target. 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."[213]

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209 Helmut Wakeham, "Why One Smokes," draft report to the PM Board of Directors, Fall 1969, http://legacy.library.ucsf.edu/tid/pnp10j00.

210 Ibid.

211 Helmut Wakeham, "Smoker Psychology Research: R&D presentation to the Board of Directors," Nov. 26, 1969, http://legacy.library.ucsf.edu/tid/xgw56b00.

212 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. In the U.S., that proportion has recently grown to nearly 40 percent.

213 R.J. Reynolds, "School Days are Here," Sept. 9, 1927,

Candy cigarettes were another early form of youth marketing, albeit indirectly. There is no evidence that cigarette makers ever manufactured candy cigarettes, but we do know that they often tolerated or even encouraged their manufacture, including candies that were clearly brand infringements. In 1946, for example, Addison Yeaman at Brown & Williamson assisted the makers of one candy company with their packaging artwork, recognizing that the sale of candy cigarettes using Brown & Williamson's brand name and imagery was "not too bad an advertisement" for makers of the combustible item.[214] Yeaman must have known that giving confectioners permission to make brand-exact candy cigarettes was a questionable business practice, judging from the caution he added to his correspondent, that his remarks were "for your more or less private information."

Reynolds was often quite explicit about the value of kids to its future survival and prosperity, as we learn from Claude Teague's 1973 "Thoughts about New Brands of Cigarettes for the Youth Market":

> 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 to be particularly attractive to the young smoker, while ideally at the same time being appealing to all smokers.[215]

The whole point of the Joe Camel campaign, launched by Reynolds in the late 1980s, was to attract the 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

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http://legacy.library.ucsf.edu/tid/atc19d00.

[214] Addison Yeaman (Brown &Williamson) to W. E. McCabe, Dec. 3, 1946, http://legacy.library.ucsf.edu/tid/clb60f00.

[215] Claude E. Teague, Jr., "Some Thoughts about New Brands of Cigarettes for the Youth Market," Feb. 2, 1973, http://legacy.library.ucsf.edu/tid/owq76b00.

> Camel needs to attract.[216]

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.[217]

We also have documents where this same aged "14-20" market was described as an opportunity, or even a "great bonanza." In 1973, for example, the William Esty company, working for Reynolds, talked about capturing the "14-20 market" in the following terms: "Creating a 'fad' in this market can be a great bonanza."[218] Philip Morris talked about "today's teenager" being "tomorrow's potential regular customer," and clearly was happy about being so effective in selling to teens. In 1975, Myron Johnston from the research department described the recent success of Marlboro as "phenomenal," and attributed this success to the company's ability to attract teenagers:

> Marlboro's phenomenal growth rate in the past has been attributable in large part to our high market penetration among younger smokers . . . 15 to 19 years old . . . my own data, which includes younger teenagers, shows even higher Marlboro market penetration among 15-17 year-olds.[219]

In parallel fashion, we have documents where tobacco executives expressed disappointment when teenagers were found to be smoking less than hoped. Johnston in the document just cited, for example, was clearly *worried* about Marlboro's declining growth rate caused by, among other things, "Slower growth in the number of 15-19 year-olds" smoking. Johnston also pointed out that with such a high share in the teenage market,

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216 Dana Blackmar to Rick McReynolds, "French Camel Filter Ad," Feb. 7, 1974, http://legacy.library.ucsf.edu/tid/eve76b00.
217 Jim F. Hind (Reynolds) to C. A. Tucker, Jan. 23, 1975, http://legacy.library.ucsf.edu/tid/lve76b00.
218 John H. McCain (William Esty Co.) to J. O. Watson, "RE: NFO Preference Share Data—'Youth' Market," March 8, 1973, http://legacy.library.ucsf.edu/tid/fyy49d00.
219 Myron Johnston to R. B. Seligman, May 21, 1975, http://legacy.library.ucsf.edu/tid/lvj46b00.

Philip Morris will "*suffer more* than the other companies from the decline in the number of teenage smokers" (emphasis added). Johnston worried about not being able to rely on "a rapidly increasing pool of teenagers from which to replace smokers through lost normal attrition."[220] As late as 1992, Philip Morris reported in its Worldwide Marlboro Monitor that "the ability to attract new smokers and develop them into a young adult franchise is key to brand development."[221]

R.J. Reynolds expressed similar disappointment when faced with obstacles to capturing the youth market. Claude Teague in his 1973 "Thoughts about New Brands of Cigarettes for the Youth Market" begins by expressing his disappointment that "we are presently, and I believe unfairly, constrained from directly promoting cigarettes to the youth market; that is, to those in the approximately twenty and under group."[222] Diane Burrows at Reynolds would later use the expression "young adult market" as a code word (or euphemism)[223] for youth targeting, as when she claimed, in a 1984 strategy document (marked "Secret"), that "Younger adult smokers have been the critical factor in the growth and decline of every major brand and company over the last 50 years. They will continue to be just as important to brands/companies in the future." Burrows went on to comment that "If younger adults turn away from smoking, the industry must decline, just as a population which does not give birth will eventually dwindle."[224]

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220 Myron Johnston, "Young Smokers: Prevalence, Trends, Implications, and Related Demographic Trends," March 31, 1981, http://legacy.library.ucsf.edu/tid/tnw74e00.

221 PMI Marketing Research, "Worldwide Marlboro Monitor: Five Year Trends 1988-1992," http://legacy.library.ucsf.edu/tid/mzw56b00.

222 Claude E. Teague, Jr., "Research Planning Memorandum on Some Thoughts about New Brands of Cigarettes for the Youth Market," Feb. 2, 1973, http://legacy.library.ucsf.edu/tid/owq76b00.

223 The word I use to designate this kind of CYA rhetoric is *eavescasting*, meaning rhetoric that is nominally private but "guarded" or even falsified for the eventuality it might one day be overheard. Cigarette makers began using rhetoric of this sort (eg., to define the "young adult market" after the 1960s, with the emergence of new threats that their internal documents might one day be exposed (from new federal rules of civil procedure enacted in 1970). Deceptive rhetoric of this sort was sometimes mandated according to the "mental copy rule" or "*New York Times* rule," meaning: don't put anything on paper you don't want to see printed in the *New York Times*. See, for example, BAT, "Records Management Programme," https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=yggf0214.

224 Diane S. Burrows, "Younger Adult Smokers: Strategies and Opportunities," Feb. 29, 1984, http://legacy.library.ucsf.edu/tid/jlu76b00.

Targeting kids became more urgent in the 1970s and '80s, when the average age of "rookies" just starting to smoke dropped from the high teens to around 13 or 14. This created new market opportunities, and a new urgency to capture this vital juvenile market. Lorillard in 1978, for example, confided that "the base of our business is the high school student."[225] Competition for teenagers became more intense, which is one reason Reynolds introduced its Joe Camel campaign, in the late 1980s. Joe Camel was launched as part of a Reynolds plan to "youthen" its image to compete with Marlboro; this proved to be an effective campaign, judging from the fact that from the beginning of the blitz in 1987, Camel's share of the under-eighteen market jumped from 0.5 to a whopping 33 percent in just three years. A 1991 study published in *JAMA* found that among children aged 3 to 6, Joe Camel was as well-known as Mickey Mouse.[226] A *Wall Street Journal* article covering the story headlined: "Joe Camel Is Also Pied Piper."[227]

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 characterized smoking behavior as "acceptable rebellion."[228] Scholars outside the industry have also recognized this "forbidden fruit" aspect. In 1952, a study by Social Research, Inc., for the *Chicago Tribune* captured this sense of starting to smoke as a form of naughty rebellion:

> 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" . . . .

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225 T. L. Achey to Curtis Judge (Lorillard), "Product Information," Aug. 30, 1978, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=kljp0060.

226 Paul M. Fischer et al., "Brand Logo Recognition by Children Aged 3 to 6 Years: Mickey Mouse and Old Joe the Camel," *JAMA*, 266 (1991): 3145–48.

227 Kathleen Deveny, "Joe Camel Is Also Pied Piper, Research Finds," *Wall Street Journal*, Dec. 11, 1991, pp. B1-4.

228 Rebakah S. Dunn, "Camel and the Hollywood Maverick," 1986, http://legacy.library.ucsf.edu/tid/jti61d00.

> 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 . . .[229]

Another noteworthy aspect of the industry's youth marketing was their effort to capitalize on their understanding of links between smoking and drinking. Cigarette makers researched the concurrent use of alcohol and cigarettes, and clearly understood the high prevalence of co-use of cigarettes and alcohol (especially beer)—and planned to use these findings to sell more cigarettes. Magazine ads and promotions in bars and nightclubs were both used for this purpose.[230]

Tobacco companies also relied on a process known as "sampling"—meaning giving away free samples—to attract new smokers and to maintain sales. Cigarette makers always denied that sampling was aimed at youth; the industry's public position has always been that sampling, like all of its advertising, was designed to get established smokers to change brands. While one can find internal company documents claiming that sampling was to be restricted to people over 21 (more eavescasting), the locations at which the companies provided free samples were often places where youth could be expected to congregate: rock concerts, sporting events, recreational areas and shopping malls. Documents from Lorillard show that sampling was an important part of its marketing efforts from the 1950s into the 1980s.[231]

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229 The passage is from "Cigarettes, Their Role and Function," a 1952 study for the *Chicago Tribune* by Social Research, Inc., that ended up in Liggett's files: https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=qrlc0014.

230 N. Jiang and Pamela M. Ling, "Reinforcement of Smoking and Drinking: Tobacco Marketing Strategies Linked with Alcohol in the United States," *American Journal of Public Health*, October 2011 101(10): 1942-54. Youth of course was just one of many industry targets; others included the "ethnic," the "exotic," and even the "geriatric"; see https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=xnyv0143.

231 See, for example, Lorillard's "1959 Work Plan," https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=qrcf0191; also L. W. Vaught to J. S. Benson, March 25, 1963, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=llvl0104 and letters from Lorillard dated Sept. 9, 1963, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=kskw0110; Aug. 27, 1963, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=lyyl0115; and Dec. 16, 1963, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=lxdb0116. Compare also Manuel Yellen's memo from Sept. 15, 1964,

There is also evidence that youth marketing documents have been destroyed, and that the language contained in some existing documents has been sanitized to cover up youth marketing.[232]

One particularly disturbing aspect of youth targeting is that tobacco manufacturers knew that the youngest smokers were also those least likely to be concerned about their health. Cigarette makers understand that education can pose a threat to the continued sale of cigarettes; this "threat" posed by education (of young people) is explicit in the industry's archives. Cigarette makers have long worried about "drying up the supply of new smokers to replace the old,"[233] which is one reason they have worried about the "threat" posed to the industry by "educational programs to prevent young, non-smokers taking up the practice of smoking."[234]

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https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=rjpm0104; also Lorillard, "4's packages–Kent, Newport," Nov. 19, 1964, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=msmm0077; Lorillard, "Work Plans – September-November, 1965," July 19, 1965, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=szdf0191; V. Friedman, "The Female Smoker Market," June 28, 1973, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=fmph0045; C. W. Toti, "Young Adult Extra Effort – Newport," Oct. 24, 1974, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=xndp0115; Marketing Corp. of America, "Lorillard - New Products Work Session: LFI, LIM, Next Steps," Aug. 11, 1975, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=fybg0129; Will Graham Company, Inc., "Lorillard '76: Options and Recommendations," March 2, 1976, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=yrlg0045; R.W. Davis, "Newport Information for Marketing Managers Meeting," Oct. 18, 1978, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=hjnb0116; R. Davis, "Black Marketing Research – Findings and Recommended Actions to Date," June 9, 1978, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=xsfj0045; J. K. Wells III to I. W. Hughes et al., Sept. 7, 1984, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=pzpg0045.

[232] K. M. Cummings, C. P. Morley, J. K. Horan, C. Steger, N-R. Leavell, "Marketing to America's Youth: Evidence from Corporate Documents," *Tobacco Control*, 11 (2002), https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=mfmj0191.

[233] Diane S. Burrows to J. R. Moore, "NBER Models of Price Sensitivity by Age/Sex," Sept. 27, 1982, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=pzxx0096. Burrows quantified the "importance to the industry" of "Teenagers 12-17"—which she calculated as accounting for 13.7 billion cigarettes per year as of 1982.

[234] Ernest Pepples to J. J. Blalock, Feb. 14 1973, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=qsml0041. Education has long been a concern of the industry, which is one reason the companies have targeted the "less educated market"; see Reynolds, "Less-Educated: Today's Trend, Tomorrow's

We should not forget that the industry's marketing to kids undercuts any claim that the "decision to smoke" is a choice made freely by well-informed adults. By and large it is not. Smokers typically have their first cigarette at age 12 or 13, and become addicted shortly thereafter. Addiction compromises a person's ability to choose freely, and the fact that most smokers start as young teens means that by the time they reach maturity, they will unfortunately be in the grip of a powerfully addicting drug.

Product Deception and Nicotine Manipulation

Denial was only one of many methods used by cigarette makers to achieve what they commonly 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," in consequence of using one humectant rather than some other (diethylene glycol vs. glycerine, for example.) "More Doctors" were said to smoke Camels, and L&Ms were hailed as "just what the doctor ordered."[235] And similar slogans were crafted for many other brands. 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 dangerous compounds. Brand names were often chosen to carry 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."[236]

Market???" 1985, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=pqlj0095.

[235] A search of "just what the doctor ordered" in the Truth Tobacco archive returns over 1400 documents, most of which are ads for L&M cigarettes. For samples of such ads, see also those reproduced in SRITA at https://tobacco.stanford.edu/.

[236] Canadian Facts Co. Ltd. (for ITL), "Four Group Discussions on Du Maurier Package Design," Jan. 11, 1968, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=mpkv0223, 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."

All of these tricks helped sell cigarettes. American's "toasting" campaign helped boost the sales of Lucky Strikes, and much of Philip Morris's early success can be traced to its much-hyped DEG cigarettes ("less irritating"). King-sizing also profited from health fears: king sized (85 mm) brands were only 5 percent of the market in 1948, but by 1954 had risen to nearly 30 percent of the market, with the "consensus" within the industry being that "millions of smokers were trying to put as much filtering space as possible between the glowing tip of their cigarette and their lungs."[237] Smokers also turned to menthols with the broader publicity given to health harms: charts of the proportion of menthol purchases kink sharply upward in 1954 (**see Figure 1**), precisely as the health crisis comes to a head.[238] Filters were clearly the biggest winner, going from essentially zero sales in the early 1950s to over half the market within the space of a decade—pivoting right around the rise and publicity of a cancer consensus.

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. Basic research becomes a vehicle for the denialist conspiracy, with the presumption being that "more research" would imply "an open controversy." 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

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[237] Bob Considine, "To Smoke or Not to Smoke," *Cosmopolitan*, April 1954, http://legacy.library.ucsf.edu/tid/grq34f00.
[238] Vello Norman (Lorillard), "The History of Cigarettes," 1983, http://legacy.library.ucsf.edu/tid/ghr91e00, Fig. 9.

cancer, immunology and allergies, and so forth.[239]

Support for research was used as 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:
>
> (a) not encourage children to smoke
> (b) make available lower tar and nicotine or other "safer" products;
> (c) pursue our researches harder than ever.[240]

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

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239 Glantz et al., *Cigarette Papers*.
240 Richard P. Dobson (BAT), "Smoking and Health," March 25, 1969, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=mlhk0201, 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."

> 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."[241]

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 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.[242]

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.[243]

"Reassurance" was one of the principal goals of advertisers—the word appears over fifteen thousand times in the industry's archives—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 innovations like skywriting, large-format billboards, point-of-sale novelties, contests and coupons, movie co-branding and product placement, 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

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241 H.Q. Sales Office, Rothmans of Pall Mall Canada Ltd., "Sales Lecture No. 3 – Motivation Research: Cigarettes – Their Role and Function," Oct. 1957, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=lkwb0223, p. 18.
242 Ibid.
243 H.Q. Sales Office, Rothmans of Pall Mall Canada Ltd., "Sales Lecture No. 6," Oct. 1957, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=ggwb0223, p. 5.

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. Cigarette manufacturers knew that smokers liked to see their filters darkening after smoking—believing this to be proof that poisons were being trapped—which is why Claude Teague at Reynolds in December of 1953 proposed adding color-change chemicals to the filter tips of cigarettes, to give the impression that poisons were being filtered out.[244] There is no evidence that color change chemicals of this particular sort were ever added to filters, but we do know that filters were made to appear as white as possible (e.g., by the addition of whitening agents like titanium dioxide) to achieve this same deceptive effect. Advertisements aired on "The Flintstones" and elsewhere emphasized the "pure white filter" of Winston cigarettes.

The advertising campaign for Lorillard's Kent cigarette "with the Micronite filter" combined several of these themes. Kent was a health reassurance cigarette, marketed with themes stressing scientific research and health protection. The earliest ads claimed that Kent:

> gives you the greatest health protection in cigarette history
>
> takes out up to 7 times more nicotine and tars than other filter-tip cigarettes
>
> goes to the extra expense to give you the exclusive, scientific Micronite Filter

Strong claims were made for Kent's "amazing" Micronite filter:

> the Micronite Filter is made of a *pure, dust-free* material that is so *safe*, so *effective* it is even used to help filter the air for hospital operating rooms
>
> the Micronite Filter is made of a material which has been used to purify the air in atomic energy plants of microscopic impurities

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[244] Claude E. Teague, Jr., "Disclosure of Invention: Filter Tip Material Undergoing Color Change on Contact with Tobacco Smoke," Dec. 17, 1953, http://legacy.library.ucsf.edu/tid/ude53d00.

> Kent's Micronite Filter is the only filter that takes out *enough* of the nicotine and tars in tobacco smoke to give sensitive smokers the health protection they need

One series of ads showed a laboratory experiment in which the smoke from two competing filtered cigarettes dripped residues onto a sheet of paper, while the smoke from Kents dripped no such residue.

Lorillard used other techniques to capture and deploy medical authority for its products. The company admitted as much in a 1957 marketing report, acknowledging that that the Micronite Filter had originally been introduced as a "quasi-medicinal product."[245] In a 1955 letter to a consumer, Lorillard made numerous medical claims on behalf of its Kent Micronite filter, boasting that it either alleviated or completely cured "smokers' throat," reduced peripheral blood vessel constriction, reduced stomach acidity, and greatly reduced or eliminated "smoker's cough."[246] In a press release titled "What Tobacco Companies are Doing with Respect to the Possible Relationship Between Cigarette Smoking and Lung Cancer," Lorillard Research Director H. B. Parmele announced that the company's response to the threat was to create the Micronite filter. Parmele explained that since the filter removed half the tar and nicotine, consumers could transform themselves from heavy to moderate smokers without reducing their cigarette consumption.[247]

Lorillard during this same time was deflecting attention from the dangers of its cancer-causing cigarettes by comparing the concentration of particulates found in urban air pollution to the concentration of such particulates in the smoke of Kent cigarettes. In a 1954 letter to Alden James, the Vice President who oversaw Kent's advertising, Parmele produced air pollution figures for three cities: Jersey City, NJ; Richmond, VA; and Louisville, KY. Parmele reassured James that the data he was providing was "sufficient to enable you to say that 'the air you breathe through a Kent Cigarette is several times cleaner than the air you normally breathe in an

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[245] Young & Rubicam, "Kent Cigarettes: Marketing and Advertising Plans 1957," Nov. 1956, https://www.industrydocuments.ucsf.edu/docs/pkgg0118.
[246] H.B. Parmele to John Anacker, March 4, 1955, https://www.industrydocuments.ucsf.edu/docs/ppyn0126.
[247] H.B. Parmele, "What Tobacco Companies are Doing with Respect to the Possible Relationship Between Cigarette Smoking and Lung Cancer," 1954, https://www.industrydocuments.ucsf.edu/docs/yrpc0124.

average American city.'"[248]

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 has been fraudulent: deceptive 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—meaning levels so low that a smoker could not extract enough nicotine to create or sustain dependency (as in a cigarette containing significantly less than .1 percent nicotine by weight in the rod, say .02 or .01 percent or even less.)[249] But they have not, apart from trivial gestures or as complements to more traditional cigarettes.

Instead, cigarettes have been designed to create and 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*".[250] (Emphasis added.)

A clear example of this manipulation is the fact that tobacco

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[248] H.B. Parmele to Alden James (Vice President, Lorillard), Sept. 10, 1954, https://www.industrydocuments.ucsf.edu/docs/fnhg0055. From 1952 to 1956 the Kent Micronite Filter was made from blue crocidolite asbestos, a fact never revealed to consumers. When Lorillard stopped using asbestos in its filters in 1956, the switch was made quietly, without alerting anyone to the change. And cigarette stocks were not pulled from the shelves. Retailers just kept selling them until they were gone. From 1952 to 1956, Lorillard sold an estimated 15 billion asbestos-laden cigarettes to unsuspecting customers. See my *Golden Holocaust*, pp. 344-45.

[249] 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), pp. 123–25. Benowitz and Henningfield claim that a cigarette containing less than about .5 mg of nicotine in the rod could not create or sustain addiction, though to achieve a margin of safety the level should be significantly lower than this.

[250] Sydney J. Green, "B.A.T.: R&D Conference - Montreal - October 24 to 27, 1967," Nov. 8, 1967, http://legacy.library.ucsf.edu/tid/ttm24a99.

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. In those few, remarkable, instances where brands have been manufactured with very low levels of nicotine in the rod, this (genuine) virtue could not be advertised honestly, given the conspiracy. When Philip Morris made Benson and Hedges De-Nic, and Merit De-Nic, and a stand-alone Next De-Nic brand, for example, the company never advertised these as incapable of creating and sustaining addiction—because this would imply that their regular cigarettes were, in fact, addictive. So even when individual companies did the right thing, they couldn't be honest about it, without violating the broader denialist conspiracy.

A similar problem confronted Reynolds, when it introduced its "heat-not-burn" brands—Premier and Eclipse—in the late 1980s and early '90s. These were genuinely safer (less deadly) cigarettes, developed by Reynolds at great expense to lessen the combustion defect in cigarettes. Recognizing that most of the harmful compounds in cigarettes come from the combustion, Reynolds designed its Premier cigarettes using "heat-not-burn" technology developed in the 1960s as part of BAT's Project Ariel. Ariel was a "space age cigarette" (Ariel was Britain's first spacecraft) designed to avoid what Addison Yeaman in 1963 called the "unattractive side effects" of traditional cigarettes—notably cancer and emphysema.[251] BAT never commercialized its Ariel cigarette, but Reynolds adopted similar methods in the 1980s to develop Premier and then Eclipse. Premier and Eclipse were advertised as offering a "cleaner" smoke, but in line with the ongoing conspiracy, they stated publicly the crucial fact, that these were genuinely safer cigarettes. In 1988, for example, when Reynolds published its 740-page Premier monograph, there was no mention of these cigarettes causing less cancer.[252] Reynolds did not start making explicit claims about Eclipse being a "safer cigarette" until the 2000s, once the broader admission had

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[251] Addison Yeaman, "Implications of Battelle Hippo I & II and the Griffith Filter," July 17, 1963, http://legacy.library.ucsf.edu/tid/xrc72d00.

[252] R.J. Reynolds Tobacco Co, *Chemical and Biological Studies on New Cigarette Prototypes that Heat Instead of Burn Tobacco* (Winston-Salem, 1988), https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=fnny0046. This is a highly-lawyered conspiracy document: nowhere in its 740 pages is there even a mention that cigarettes cause cancer or that nicotine is addictive. Accord was a comparable cigarette manufactured by Philip Morris, and that, too, was not revealed as safer.

been made that ordinary cigarettes like Winstons do in fact cause cancer.

Cigarette makers clearly knew that cigarettes cause cancer and could be addictive 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, for example, the PR firm recorded one company's research chief commenting on how "fortunate" it was for the companies that cigarettes were "a habit" that smokers "can't break."[253] "Nicotine addicts" is the expression BAT's Chief Scientist Charles Ellis used to refer to smokers in an internal memo from 1961, and in 1963 Brown and Williamson Chief Counsel Addison Yeaman stated in yet another internal report that "nicotine is addictive."[254] 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. Efforts to reassure smokers increased in the 1960s as more and more smokers started trying to quit, fearing for their lives (while also trusting in the 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 novel filter gimmicks and "light" and "ultralight" brands in the 1970s.

Philip Morris introduced a number of such gimmicks in the 1950s, including a rebranded Parliament cigarette with a trademarked "recessed" filter. Parliament had been one of the flagship brands of Benson & Hedges, a brand originally advertised as a "mouthpiece" cigarette (stuffed with cotton, beginning in 1931) and later, in the 1950s, as a "hi-fi" (high filtration, high fidelity) cigarette.[255] The Benson & Hedges (B&H) company was acquired by Philip Morris in 1954—which is how the Cullmans arrived at the new company, along with B&H's legacy brands. Philip Morris soon thereafter redesigned Parliament to include a recessed filter, largely to compete against Kent, another popular reassurance brand. Parliament was

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253 Edwin F. Dakin, "Forwarding Memorandum: To Members of the Planning Committee," late Dec. 1953, http://legacy.library.ucsf.edu/tid/lho66b00, p. 2.
254 Sir Charles Ellis, "Meeting in London with Dr. Haselbach," Nov. 15, 1961, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=ljgd0040; Addison Yeaman, "Implications of Battelle Hippo I & II and the Griffith Filter," July 17, 1963, http://legacy.library.ucsf.edu/tid/xrc72d00.
255 Pat Walford to Ed Wickham, Nov. 9, 1979, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=kjwb0184.

later refitted with a "charcoal filter" (in 1964), and in 1979 was given the new name "Parliament Lights," following a trivial change in Hauni ventilation.[256] The rebranding was done "to attain low tar status in tune with trends,"[257] though nothing was done to change the cigarette itself, from a health point of view (the constituent tobacco was unchanged, for example). This is further evidence that the designation of certain cigarettes as "light" (or low tar) was a deception. A press release accompanying Parliament's re-branding announced that while the name was changing, the product itself "will not change."[258] As if a bottle of ordinary water had suddenly become a bottle of vitamin water, with the implication of being "better for you."

Safety was an implied feature of Parliament advertising throughout the 1960s and '70s. On television and on radio, this "upscale" brand was advertised as offering an "extra margin" of safety, with safety implied by a comparison of Parliament's "recessed filter" to crash helmets, face masks, roll bars (on a dune buggy), life preservers, protective goggles, hard hats, protective padding (for a rodeo stuntman), spare parachutes, safety harnesses, and seat belts. The suggestion was that Parliament's recessed filter would give you an "extra margin" of safety: "This man knows the value of an extra margin—in the life jacket he wears, in the cigarette he smokes." Parliament was said to put the filter "where it does you the most good—recessed a neat, clear, quarter inch away."[259]

Philip Morris was well aware that Parliament was perceived as a safer cigarette. A 1977 New York City focus group, for example, found that smokers of this brand were "moderate, orderly people" who wanted a clean cigarette, believing the recessed filter to provide "a more hygienic and pleasurable smoke." Parliament's filter was regarded as giving smokers the feeling "they are smoking a healthier, safer cigarette because the filter keeps them from having physical contact with the trapped tar and nicotine impurities."[260] A 1994 history of the brand noted that it was still being

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[256] K. T. Sanderson to J. E. Wickham, "History of Parliament Cigarettes," March 24, 1983, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=kjwb0184.
[257] "Parliament Lights Brand History," 1994, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=grnw0109.
[258] "Parliament Lights A New Name in Low-Tar Smoking" (press release), March 19, 1979, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=zyjn0019.
[259] For a series of Parliament ads shown on television in the 1950s and '60s, see: https://archive.org/details/tobacco_uhq23e00.
[260] Fay Ennis Creative Research Services (for Philip Morris), "Summary of Three Focus

perceived as "Low in tar and nicotine."[261]

Ads for Parliament often featured wordplay: couples were depicted as having a "perfect recess" together,[262] and Parliament was even advertised in romance novels.

And Parliament advertising bore fruit. William Dunn in 1966, for example, noted that when charcoal was added to filters, this proved to be "an effective advertising gimmick."[263] Cigarette makers actually calculated the efficacy of advertising on different television shows, measured in terms of thousands of consumers reached per dollar invested. Parliament in the late 1950s, for example, was advertised on the Perry Mason show, reaching of millions of viewers at a cost the Philip Morris of only $2.39 per thousand commercial minutes (TCM).[264]

By the mid-1990s, Parliament was selling billions of cigarettes per year, especially in the northeastern states of the U.S. A brand review from the 1990s bragged about the brand's increasing share of "young adult smokers," following launch of the Parliament Party Zone "Bar night" campaign in summer resort markets of New England, which had reached over 100,000 "young adults" and caused 46,000 "young adult" smokers YAS) to actually try the product. The brand by this time was also targeting

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Groups: Perceptions of Present Parliament Cigarettes," June 17, 1977, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=fznp0117, p. 6. This same study found that Parliament smokers "expect to reach a compromise between safety and satisfaction. Their ambivalence about smoking waivers between trying to find an acceptable healthier but satisfying cigarette and giving up smoking altogether" (p. 13). Smokers of Parliaments imagined themselves to be "a discriminating, elite corps" who were "pleased to think that they were smoking a cigarette which was healthier than some of the low tar brands" (p. 16).

[261] "Parliament Lights Brand History," 1994, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=grnw0109.

[262] For examples of Parliament's print ads: https://tobacco.stanford.edu/?s=parliament.

[263] Myron Johnston, "Market Potential of a Health Cigarette," June 1966, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=jfvc0123.

[264] TCM (Thousand Commercial Minutes) was an industry metric for advertising reach, with 1 TCM representing a thousand people seeing one minute of any given ad. See "Estimated Network Television Cost Efficiencies by Cigarette Type and Brand October-December 1958," 1959, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=lmvx0049. Parliament also got a boost from *Readers Digest* and *Consumer Reports*, both of which embraced filters in the 1950s.

an "older female" audience through its "romance adventure theme," featuring ads in romance novels like the "Claire & Philippe Romance Saga" series. Advertising had also incorporated "Perfect Recess visuals," joining the physical feature of the "filter" with a suggestion of the cigarette being enjoyed by romantic couples, all of which was intended to provide "older female smokers with an escape/fantasy in their everyday lives."[265]

As for addiction: cigarette 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."[266] 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 manufacturers capitalized on this tendency of smokers to "self titrate," adjusting their smoking behavior to maintain whatever nicotine levels to which they have become accustomed. Cigarette makers also learned that they could fool the FTC's machines by punching tiny holes into the wrapper near the mouth end of the cigarette, which smokers could easily cover up, allowing higher deliveries to the smoker than would be expected from the industry's (and FTC's) "tar and nicotine" measurements. Cigarette makers thus knew that cigarettes labeled "low tar" and "light" delivered the same levels of toxins as "regular" cigarettes—thanks to "compensation" (i.e., addiction).

These companies' (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

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[265] "Parliament Lights Brand History," 1994, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=grnw0109.
[266] R. E. Smith to F. J. Schultz (Lorillard), "Lowered Nicotine Project," Nov. 9, 1976, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=pgvc0040.

machines.[267] It also helps us to understand why such efforts were made to add compounds such as diammonium phosphate (DAP, an ammonia salt), which produced a more potent ("freebased") nicotine molecule. Philip Morris began adding ammonia to its recon sheet in the early 1960s, and competitors spent a great deal of time trying to figure out exactly how the company was ammoniating its products—to the tune of millions of pounds of ammonia added every year—which competitors judged to be the "secret" and "soul" of Marlboro.[268]

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The main goal of marketing certain cigarettes as "low tar" or "light" was to reassure smokers. From the internal records of the companies, however, we know that cigarette manufacturers knew that neither of these gimmicks provided any real health benefit. Cigarette manufacturers realized that smokers tended to smoke such cigarettes more intensively, compensating for low-rates of (robot) 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 addicting alkaloid (and with it, the carcinogenic tars). That is why "low delivery" cigarettes were, and remain today, fraudulent: the descriptors

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[267] The earliest example I have found of recognition of the basic mechanisms of compensation is from 1933, in the *Nebraska Medical Journal*, where we hear that "In the process of manufacturing cigarettes where the greater percentage of nicotine had been taken out of a certain brand, it was found that the habitué consumed thrice the number of the one that had the tobacco blend in the original state"; see Henry Farrell, "The Billion Dollar Smoke," *Nebraska Medical Journal*, 18 (1933): 226-28. Farrell here also traced the rise of the cigarette to "an advertising performance stealthy in the extreme" and "magnificent in its summons and invocation." Industry insiders were also recognizing titration: Hiram Hanmer at American Tobacco in 1935 talked about how smokers would adjust the intensity with which they smoked to maintain a constant intake: "Actually, the smoker compensates for this; that is he exerts a greater suction on the cigarettes with poor draft and less on those with good draft, and, unconscious perhaps, attempts to approximate a standard size of puff." See http://legacy-dc.ucsf.edu/tid/pko54f00/pdf. Hanmer here describes nicotine and carbon monoxide as the "toxic" substances in smoke; he seems to have believed that cigarettes were safer than cigars, consistent with his view that "In cigarette smoking, less CO is produced than in any other form of tobacco smoking" (p. 3).

[268] 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.

"low tar" or "light"—and even "filter"—misrepresent the fact that cigarettes with such descriptors 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" (a euphemism for nicotine or sometimes even for addiction). Filters also tended to reduce the average particle size of cigarette smoke, which made it easier for smoke to penetrate even further into the lungs. Tumors in these distal regions tend to be both harder to treat and more difficult to diagnose, elevating morbidity. Surgeons 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).[269]

Philip Morris conducted extensive research into human smoking behavior, finding that smokers inhaled the same amount of nicotine from "light" cigarettes as from regular (non-"light") brands, but never disclosed the results of this research.[270] Nor did the company reveal that it had developed a "human smoke simulator" to more accurately mimic human smoking than the FTC's approved smoking machine, or that tests using the "human smoke simulator" showed that smokers who switched from regular

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[269] 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.

[270] For a compilation of studies, see PM's "Human Smoking Behavior," 1983, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=ymfx0045; W. L. Dunn, Jr., "Project 1600 Consumer Psychology," Aug. 25, 1967, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=slhc0131; Helmut Wakeham to Hugh Cullman, "Trends of Tar and Nicotine Deliveries over the last 5 Years," March 24, 1961, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=pqjp0124; W. L. Dunn, Jr. to Robert Seligman, "A Study of the Effect of Lip Occlusion of Air Holes on Mainstream Delivery in Air Diluted Cigarettes," July 28, 1967, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=fnxc0115; Helmut Wakeham to Paul D. Smith, "Plastic Dilution Tipped Parliament," Aug. 11, 1967, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=ggmk0127; Helmut Wakeham to PM Board of Directors, "Smoker Psychology Research," Nov. 29, 1969, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=gqpx0037; Helmut Wakeham, "Some Unexpected Observations on Tar and Nicotine and Smoker Behavior," March 1, 1974, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=phgp0124.

Marlboros to Marlboro "lights" did not end up receiving less tar or nicotine.[271] Philip Morris also conducted, but never revealed, tests that showed that the smoke from its ventilated "lights" cigarettes was more mutagenic, and thus would have a greater likelihood of generating tumors.[272]

Though some Philip Morris executives publicly claimed that smokers were choosing "lights" because of a preference for "lighter taste," the marketing research performed for the company stated unequivocally that smokers were choosing lights for one "simple and single" reason: "better for you, less harmful, easier on the lungs, throat, etc."[273] "Lights" helped derail the company's customers from quitting.[274] And Philip Morris, working with the other tobacco companies, continued until the 1990s to tell the FTC that it should not change its method for reporting tar and nicotine levels, even though internally the company acknowledged that "people smoke in such a way that they get much more than predicted by [the] machine."[275]

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271 Barbro Goodman to Leo F. Meyer, "Marlboro-Marlboro Lights Study Delivery Data," Sept. 17, 1975, https://www.industrydocuments.ucsf.edu/docs/#id=yxky0125; Barbro Goodman to Leo F. Meyer, "Smoking Parameters for R&D Personnel," Sept. 23, 1976, https://www.industrydocuments.ucsf.edu/docs/#id=rrnd0107; Barbro Goodman to Leo F. Meyer, "Summary of Human Smoke Simulator Program," Aug. 19, 1977, https://www.industrydocuments.ucsf.edu/docs/#id=lyyd0107.

272 J. Booker & S. Drew to R. A. Pages, "Models II Cigarettes (Set II): *S. typhimurium* Activities," Nov. 29, 1977, https://www.industrydocuments.ucsf.edu/docs/#id=tslm0109; R.A. Pages to W. F. Kuhn, "6906 Annual Report - Biological Effects of Smoke," May 4, 1978, https://www.industrydocuments.ucsf.edu/docs/#id=smky0116; INBIFO, "Mouse Skin Painting at INBIFO," May 11, 1982, https://www.industrydocuments.ucsf.edu/docs/#id=mxhp0124; Wolf Reininghaus to Cathy Ellis, "Smoke Comparisons," Jan. 28, 1994, https://www.industrydocuments.ucsf.edu/docs/#id=nyjj0045; INBIFO, Ames Mutagenicity Assays, Aug. 13, 2001, https://www.industrydocuments.ucsf.edu/docs/#id=qmgw0073.

273 The Roper Organization, Inc., "A Study of Smokers' Habits and Attitudes with Special Emphasis on Low Tar and Menthol Cigarettes," March 1979, https://www.industrydocuments.ucsf.edu/docs/#id=kxhp0042. Roper here found that the appeal of menthols was "more in terms of their effects than their tastes."

274 Wells, Rich & Greene, "Reactions to a Proposed New 85mm Benson & Hedges," Aug. 28, 1978, https://www.industrydocuments.ucsf.edu/docs/#id=trpx0119: "Those who are currently smoking 'Lights' do so because '. . . they are better for you. . .' than full flavor cigarettes." Smoking Lights "is an alternative to quitting -- which most cannot accomplish."

275 Helmut Wakeham, "Some Unexpected Observations on Tar and Nicotine and Smoker Behavior," March 1, 1974, https://www.industrydocuments.ucsf.edu/docs/#id=phgp0124; "Conclusion: The FTC standardized test should be retained. . . It gives low numbers." In

Filtration also had the unfortunate consequence that by eliminating certain "irritants" from smoke, the smoke became easier to inhale and therefore more deadly. That is probably the single greatest tragedy—or tragic irony—in twentieth century cigarette manufacturing: the quest for ever "milder" brands, originally perhaps with the honest goal of making a genuinely safer cigarette, ended up being a cigarette that was easier to inhale and therefore far more deadly. 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, again, is that by lessening "irritation," cigarette designers were actually elevating hazards.

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

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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 consequence of litigation. Even today, while it is true that several key

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1980, rather than disclosing to the Surgeon General the companies' internal research about compensation, the Tobacco Institute called for "more research"; see Scientific Affairs Division, "Suggested TI Response to the 1981 Surgeon General's Report," Dec. 15, 1980, https://www.industrydocuments.ucsf.edu/docs/#id=lpkp0146.

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, for example, but they have not yet admitted that the chemistry of cigarette smoke has been manipulated to sustain addiction, or that millions of Americans have died from diseases caused by smoking. 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 to the public. Considered in the frame of its global reach, a more 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. What we do know is that orders were given for certain documents to be destroyed, and research personnel appear to have complied with such orders.

An important turning point in this regard came in the late 1960s, when cigarette makers became increasingly concerned about the possibility of embarrassing facts or projects being discovered within their archives. Reynolds in 1969, for example, began taking great pains to make sure there would be no embarrassing admissions in its files. That is one reason Reynolds dissolved its animal research facility at Winston-Salem in the spring of 1970, in the so-called "Mouse House massacre."[276] A recent change in American Federal Rules of Civil Procedure had made it easier to obtain internal records from industries facing lawsuits,[277] which led Reynolds to try to cleanse its files of incriminating documents. Such efforts were imperfect, which helps explain why we have preserved a number of documents describing different methods for how to destroy documents—and how to cover this up—from December of 1969. Murray Senkus on

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[276] See Joseph Bumgarner's deposition from Nov. 11, 1996, for *Texas v. American Tobacco Co.*, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=xffg0021.

[277] David R. Hardy to DeBaun Bryant, Esq., Aug. 20, 1970, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=hfvw0048.

December 18 of that year wrote to Max Crohn in Reynolds's Legal Department, offering to "rewrite" or "invalidate" certain documents, should that become necessary "for the successful defense of our present and future suits."[278]

About this same time (1970), Reynolds also began destroying correspondence and reports from its collaboration with Clifford Chappel of Bio-Research Laboratories in Montreal. Chappel had been doing contract research for the Camel maker since 1968,[279] principally looking into whether smoke from a tobacco substitute known as "Sutton material" might be less tumorigenic than that from a reference cigarette. By 1970, however, Rodgman and others at Reynolds had become concerned that, since the reference cigarette was Camel, Chappel's inquiries might leave evidence in Reynolds's files of the company knowing that its cigarettes cause cancer. Rodgman supervised the destruction of such reports and correspondence which, as he notes in a hand-written document from the spring of 1970, were destroyed "for legal reasons."[280]

It may seem surprising to learn that Reynolds took steps to make sure that its foreign collaborators wouldn't have embarrassing materials in their files, but this cross-border collaboration is important. Reynolds made sure that its international subsidiaries were on the same denialist past, as we learn from a 1975 memo sent from Derick Crawford in Canada to G. Dee Smith in Winston-Salem (reporting on his recent phone conversation with RJR research chief Murray Senkus). Crawford here makes it clear that Canada was following the American "no proof" position with regard to cancer:

> I stressed [to Senkus] that we are following the same attitude here as in the U.S. – namely that the link between smoking and lung cancer has not been proven.[281]

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278 Murray Senkus (research director, Reynolds) to Max H. Crohn (Legal Department), "Invalidation of Some Reports in the Research Department," Dec. 18, 1969, http://legacy.library.ucsf.edu/tid/pye89d00. This letter is interestingly out of sequence in the industry's files, explaining perhaps how or why it survived.

279 Alan Rodgman to W. M. Bright, "Visit to Bio-Research Laboratories, Ltd., Montreal, P.Q.," July 15, 1968, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=hrbm0088.

280 Alan Rodgman, "Chappel," handwritten note from spring 1970, http://legacy.library.ucsf.edu/tid/jrg79d00.

281 D. A. Crawford to G. Dee Smith (Reynolds), "CTMC Sponsored Medical Research," Jan. 27, 1975,

Canadian cigarette makers were also supposed to eliminate embarrassing documents from their own files, which caused a certain amount of consternation amongst Canadian manufacturers.[282] By the 1970s, Macdonald Tobacco was taking orders from Winston-Salem, e.g., to "purge our files of references to ages below 18 years."[283]

The fact that steps were taken to destroy documents is made clear in a 1969 document, where Murray Senkus wrote to Max Crohn in Reynolds's Legal Department, commenting with regard to the "invalidation of some reports in the research department" as requested by the company's lawyers:

> We do not foresee any difficulty in the event a decision is reached to remove certain reports from Research files. Once it becomes clear that such action is necessary for the successful defense of our present and future suits, we will promptly remove all such reports from our files.

Senkus then provided a cover-story for such removal, noting that "we can cite misinterpretation of data as reason for invalidation."[284]

Reynolds clearly did not want these documents seeing the light of day; the company did not want potentially embarrassing documents in its files. Some of these documents have been recovered from other sources, but it is reasonable to assume that others, more perfectly destroyed, will never be recovered.[285]

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https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=mnnv0223.

[282] David Hammond et al. "Destroyed Documents: Uncovering the Science that Imperial Tobacco Canada Sought to Conceal," *CMAJ*, 181 (2009): 691-98, http://davidhammond.ca/wp-content/uploads/2014/12/2009-CMAJ-Industry-Documents-20091.pdf.

[283] Robert C. Shropshire (President, Macdonald Tobacco) to G. Dee Smith (President, RJR Tobacco International), "Age Reference in Marketing Plans," Sept. 7, 1978, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=fzwb0223.

[284] Murray Senkus to Max Crohn, "Invalidation of Some Reports in the Research Department," Dec. 18, 1969, http://legacy.library.ucsf.edu/tid/pye89d00.

[285] Those known to have been destroyed and recovered include studies exploring the cancer-causing potential of cigarettes with low-visible sidestream smoke; see, for example, A. G. Barnes and E. D. Massey, "Ames Mutagenic Activity of Sidestream Condensate," Jan. 26, 1987, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=mfdc0140.

Note on the Magnitude of the Harms Caused by Cigarettes

Cigarettes are the largest preventable cause of death in the U.S., as in most other nations of the world. In 2013, according to the U.S. Office on Smoking and Health, cigarettes were responsible for 480,000 annual deaths in the country.[286] This unparalleled toll is largely because of the immense volume of cigarettes smoked: Americans still smoke about 250 billion cigarettes per year, a figure that is down about 60 percent from the peak value of 630 billion in 1981 (see **Figure 2**).

In the aggregate, this total number of cigarettes smoked and deaths caused is remarkable. If Americans smoked an average of 400 billion cigarettes per year from 1950 to 2000, this means a total of about 20 trillion cigarettes smoked during this period. Twenty trillion cigarettes is enough to make a continuous chain of cigarettes some 1600 million kilometers long, or enough to circle the globe about forty thousand times. It is enough to stretch from the earth to the sun and back, with enough left over for several round trips to Mars. We can think of this as a velocity: if 250 billion cigarettes are smoked every year, this means that Americans still smoke about 680 million cigarettes per day, or 28 million per hour. Picture a cigarette rod of infinite length, burned and inhaled at twice the speed of sound.

Cigarettes cause about one death per million smoked,[287] which means that the 20 trillion cigarettes smoked from 1950 to 2000 caused about 20 million deaths. That number is consistent with the estimate of the 2014 report of the U.S. Surgeon General, which calculated 20,830,000 deaths from smoking in the U.S. over the fifty year period from 1965 to 2014.[288] This does not mean that these 20 million Americans would not have died; it simply means that twenty million Americans would have lived to die from something other than their cigarettes. Tobacco deaths are entirely preventable. One can think about this in terms of years of life lost: Every

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[286] The Health Consequences of Smoking—50 Years of Progress. A Report of the Surgeon General (Rockville: Office on Smoking and Health, 2014), http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/full-report.pdf.

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

[288] *The Health Consequences of Smoking—50 Years of Progress. A Report of the Surgeon General* (Rockville: HHS, Office on Smoking and Health, 2014), http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/full-report.pdf.

cigarette you smoke takes 10 minutes off your life (on average),[289] which means that cigarettes robbed Americans of about 400 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.[290] We can also calculate the number of deaths produced by individual factories. If Philip Morris's Richmond plant produces 146 billion cigarettes per year, for example, this means that this one factory is responsible for the deaths of 146,000 smokers per year (along with roughly 15,000 deaths from secondhand smoke).[291]

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 a 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. One can infer from this that the value of a human life to a modern cigarette manufacturer is on the order of $10,000.[292]

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

[290] 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).

[291] Robert N. Proctor, "The History of the Discovery of the Cigarette-lung Cancer Link: Evidentiary Traditions, Corporate Denial, Global Toll," *Tobacco Control*, 21 (2012): 87-91.

[292] Ibid.

Please note: In addition to the above opinions, I may testify about the testimony or opinions of other witnesses and experts, including opinions not explicitly stated in this report.

Signed: Jan. 31, 2022

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Robert N. Proctor
Professor of the History of Science and
Professor, by courtesy, of Pulmonary and Critical Care Medicine
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Figures 1 & 2

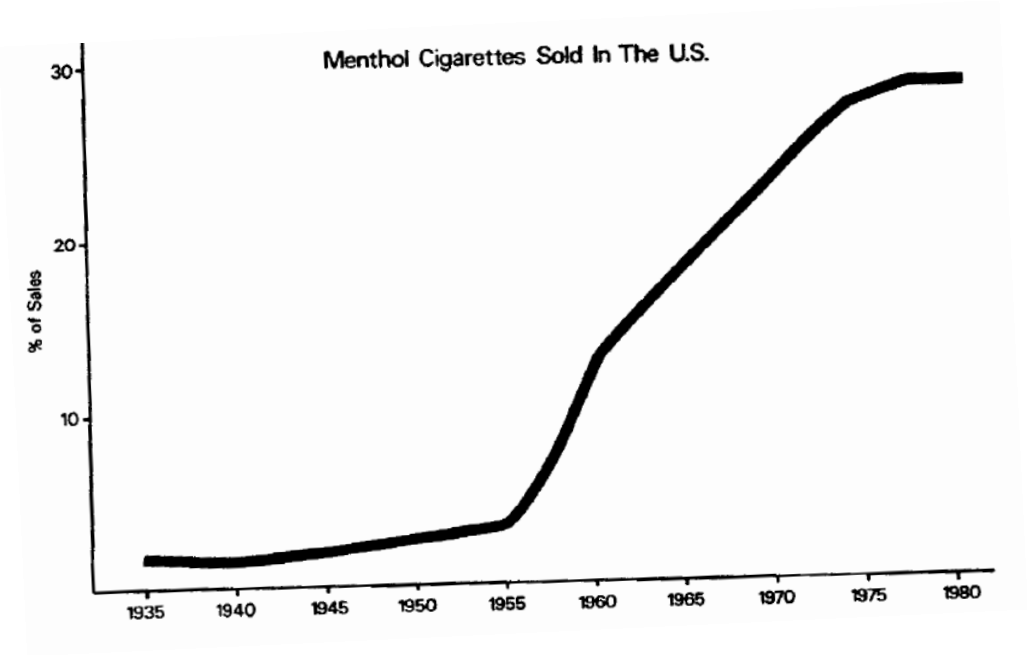
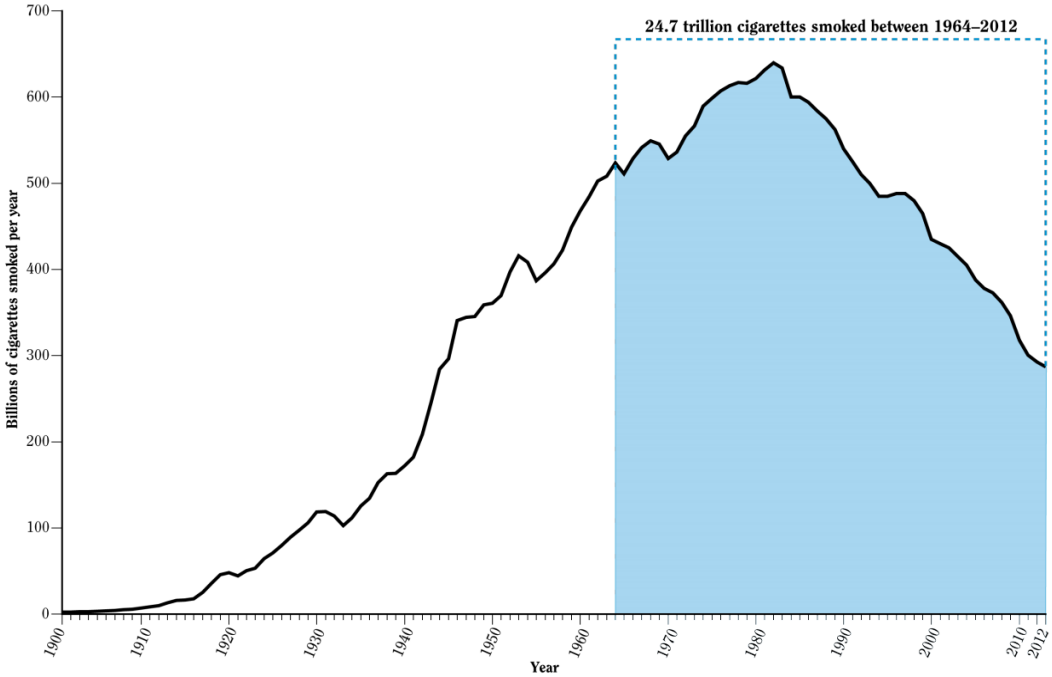


Figure 1: Menthol Sales in the United States, 1935 to 1980. From Vello Norman (Lorillard), "The History of Cigarettes," 1983, http://legacy.library.ucsf.edu/tid/ghr91e00, Fig. 9. Note the sharp increase in sales with the proof and publicity of cancer harms in the mid-1950s: As with "filters," menthols were a reassurance design; smokers thought they would be safer.

Figure 2 Total cigarette consumption, United States, 1900–2012



Source: Miller 1981; U.S. Department of Agriculture 1987, 1996, 2005, 2007a,b; Centers for Disease Control and Prevention 2012.
Note: Data shown are annual total consumption of cigarettes. This differs from Figure 2.1, which reports the annual adult (18 years of age and older) per capita consumption.

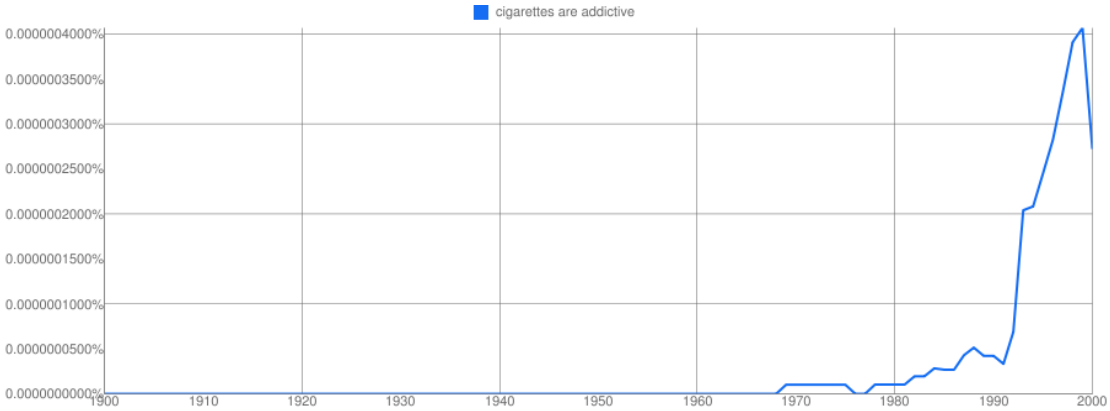
Figure 2: The Arc of the Epidemic: Cigarette consumption in the U.S. from 1900 to 2012. From the Executive Summary of the 2014 Surgeon General's Report, p. 12.

Appendix I: Ngrams for Certain Cigarette Expressions in English

NB: Ngrams measure the relative frequency in 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 in wide use prior to the 1980s:

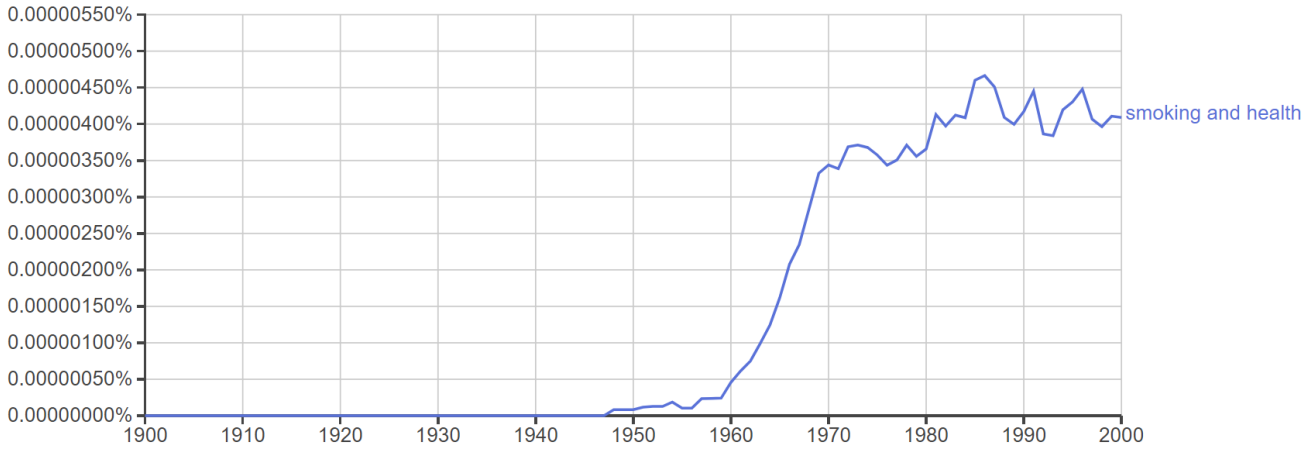


Sources:

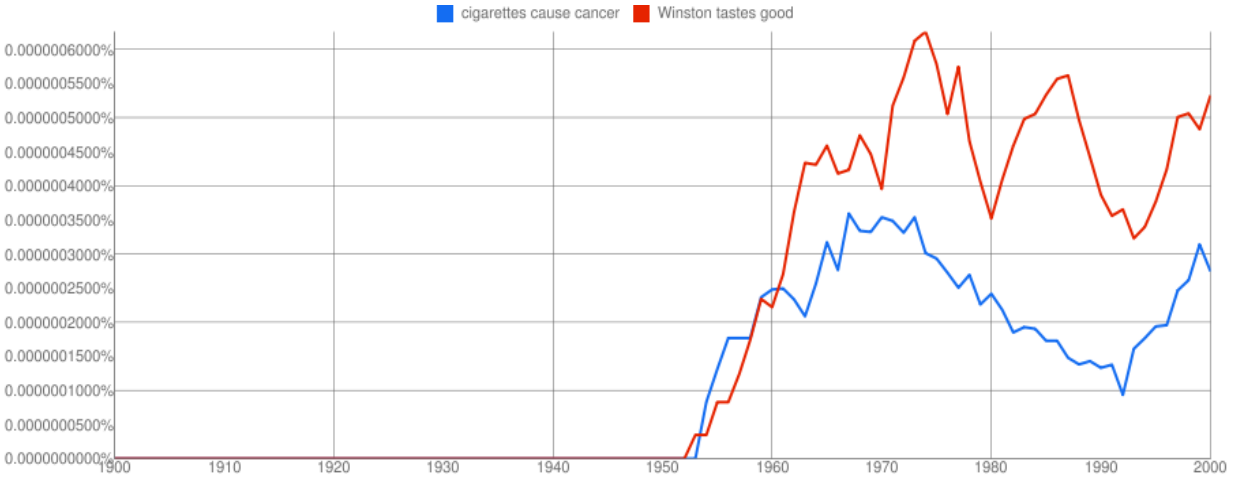
http://ngrams.googlelabs.com/graph?content=tried+to+quit+smoking&year_start=1850&year_end=2000&corpus=5&smoothing=3

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

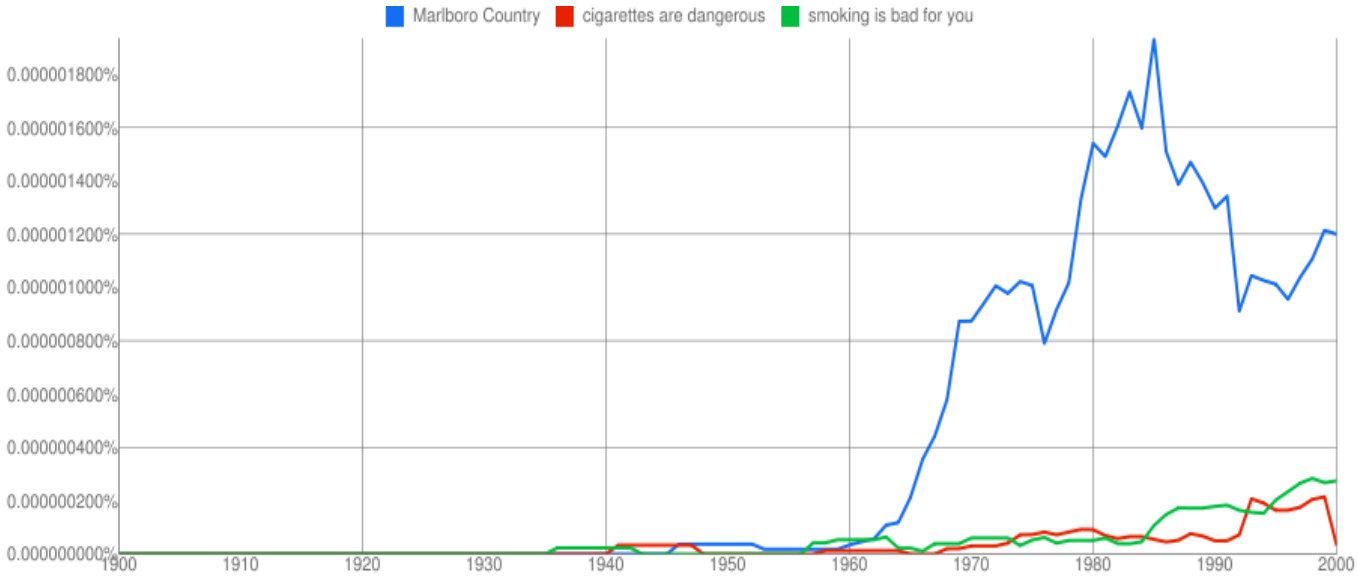
(c) "Smoking and health" was not part of the lingua franca in the U.S. until the 1950s:



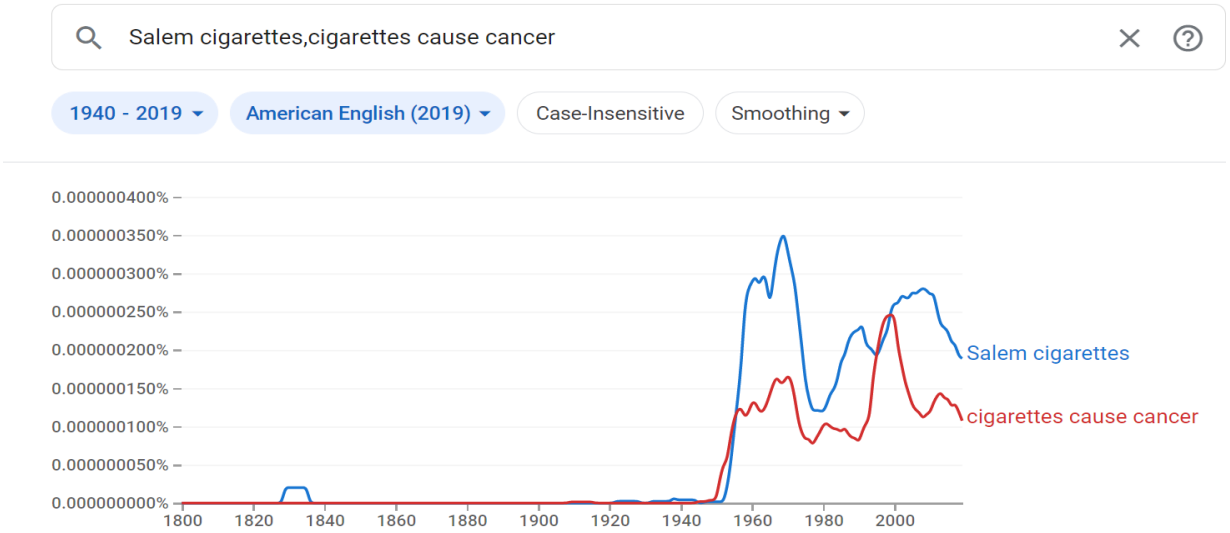
(d) From 1960 to 1990, Reynolds's slogan "Winston tastes good" was more common than "cigarettes cause cancer":



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



(f) "Salem cigarettes" was written as frequently as "cigarettes cause cancer":



Sources:

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

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.

Appendix II: Chronology of Conspiracy

1. 1911: Buck Duke's American Tobacco trust is broken up by exercise of the Sherman Antitrust Act.
2. 1913: R.J. Reynolds launches "American blend" Camel cigarettes with a coast-to-coast marketing campaign.
3. 1917-18: Cigarettes are distributed to troops on the front in WWI, an effort organized by the American Tobacco Company.
4. 1927: R.J. Reynolds sends a memo to all sales division managers announcing: "School Days are Here. And that means BIG TOBACCO BUSINESS for somebody. Let's get it—and start after it RIGHT NOW."[293]
5. 1928: Reynolds sends another memo urging its Sales personnel to target high schools, prep schools, colleges and universities: "Get your men intensely interested in lining up these students for our brands - both as CONSUMERS and BOOSTERS. And see to it that the stores and stands near the schools have a good supply of our products."[294]
6. 1929: American Tobacco pays women to smoke cigarettes while marching in New York's Easter Sunday parade, with the goal of identifying cigarettes as "torches of freedom" and smoking with women's liberation. American's "Reach for a Lucky Instead of a Sweet" campaign is part of this same effort to market to women: women were urged to smoke a cigarette after dinner, instead of a dessert, to keep slim and trim. Marketing to women would continue throughout the twentieth century, culminating in tie-ins to sports with the Virginia Slims Tennis campaigns of Philip Morris from the late 1960s into the 1990s.
7. 1932: Charles F. Neiley, Vice President at American Tobacco, points out with regard to filters that "The idea of a filter in a cigarette is not new - we have had many suggestions offered along these lines."[295]
8. 1932: Hiram R. Hanmer, a chemist at American, points out to one of his superiors that while a filter could be constructed "which would absorb any desired quantity of the constituents of the smoke," this could not be done "without sufficient change in character and flavor as to be readily detected and probably condemned by the habitual smoker." Hanmer added that the

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[293] R.J. Reynolds, "School Days Are Here," Sept. 9, 1927, http://legacy.library.ucsf.edu/tid/atc19d00.
[294] R.J. Reynolds, "Regular School is Over," June 13, 1928, http://legacy.library.ucsf.edu/tid/zsc19d00.
[295] Charles F. Neiley to Hiram Hanmer, Dec. 14, 1932, http://legacy.library.ucsf.edu/tid/boc54f00.

drawback of all such devices was that "they cannot be made to absorb selectively or proportionally" without the resulting smoke becoming "unbalanced and unsatisfying."[296]

9. 1932: Hiram Hanmer writes to his medical consultant, Clarence W. Lieb, that with regard to the present of carbon monoxide in cigarette smoke, they should just "let sleeping dogs lie unless we are able to eliminate the compound practically entirely from the smoke of LUCKY STRIKE cigarettes."[297]
10. 1936: Angel H. Roffo of Argentina uses tobacco tars to produce tumors on the ears of experimental animals (rabbits) and publishes graphic images of these cancers in his *El tabaco como cancerígeno* (Buenos Aires: Imprenta de la Universidad, 1936).
11. 1938: Willard Greenwald, Director of Research at Philip Morris, proposes establishing a "tobacco institute" to forge "closer and more friendly relations between the companies."[298]
12. 1939: Greenwald describes efforts by Philip Morris to get physicians to smoke that brand, adding that "under no circumstances would we want anyone to smoke Philip Morris cigarettes were smoking definitely deleterious to his health."[299] Philip Morris and the other companies subsequently make similar claims, but after 1953 all of these are made publicly and never in private. This suggests that such claims were honest prior to 1953 and dishonest thereafter.
13. 1939: Alton Ochsner and Michael DeBakey in 1939, after operating on dozens of lung cancer sufferers and reviewing the global medical literature, explain the dramatic rise in lung cancer: "In our opinion the increase in smoking with the universal custom of inhaling is probably a responsible factor, as the inhaled smoke, constantly repeated over a long period of time, undoubtedly is a source of chronic irritation to the bronchial mucosa."[300]
14. 1941: American Tobacco, Reynolds, and Liggett, along with George Washington Hill, Paul M. Hahn, Ed Darr, and a dozen other executives, are convicted on counts of "conspiracy in restraint of trade, attempt to

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[296] H. R. Hanmer to C. F. Neiley, Dec 15, 1932, http://legacy.library.ucsf.edu/tid/aoc54f00.
[297] H. R. Hanmer to Charles Lieb, Aug. 20, 1932, http://legacy.library.ucsf.edu/tid/hak54f00.
[298] Memorandum of Meeting between Dr. Haag and Dr. Greenwald," Jan. 18, 1938, http://legacy.library.ucsf.edu/tid/xvx44f00.
[299] Willard Greenwald, "Activities of the Research Department for 1938," Jan. 6, 1939, http://legacy.library.ucsf.edu/tid/srd38e00.
[300] Alton Oschner and Michael DeBakey, "Primary Pulmonary Malignancy," *Surgery, Gynecology & Obstetrics*, 68 (1939): 435-51, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=xmyl0123.

monopolize, conspiracy to monopolize, and monopolizing in the tobacco industry, in violation of the Sherman Anti-Trust Act." Convictions are upheld by the U.S. Supreme Court on December 18, 1944,[301] helping us to understand the sense of concern over potential anti-trust implications of the subsequent meetings at the Plaza Hotel in 1953.

15. 1941: Edward S. Harlow at the American Tobacco Co. (in the research dept.) characterizes the Medical College of Virginia as "sold American."[302]
16. 1941: R.J. Reynolds Chairman S. Clay Williams testifies it "was absolutely essential to maintain advertising in the cigarette business in order to maintain, and certainly to extend, the volume of consumption on Camel Cigarettes."[303]
17. 1941: Harry M. Wootten, an investment advisor at Reynolds and an influential chronicler of tobacco business statistics, attributes "the phenomenal growth of cigarette consumption in this country" to "the development of nation-wide and unprecedented advertising campaigns in promotion of this product."[304]
18. 1946: Harris Parmele, Director of Research at Lorillard, points out that "Certain scientists and medical authorities have claimed for years that the use of tobacco contributes to cancer development in susceptible people" and that "Just enough evidence has been presented to justify the possibility of such a presumption."[305]
19. 1946: Addison Yeaman, an influential lawyer at Brown & Williamson, in a letter from December of that year characterizes candy cigarettes imitating the tobacco company's brands as "not too bad an advertisement" for kids that will eventually learn to smoke.[306] Cigarette makers over subsequent decades turn a blind eye to infringements on their trademarks by candy makers.
20. 1948: Willard Greenwald at Philip Morris urges his company to "get the student before he becomes a doctor."[307]
21. 1949: Joe Cahn of Philip Morris describes the "College Plan" for his

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[301] "Transcript of Record, Supreme Court of the United States, October Term, 1944," http://legacy.library.ucsf.edu/tid/cwz24f00.
[302] Edward S. Harlow to Hiram Hanmer, "The Importance of Biological Research," Feb. 3, 1941, http://legacy.library.ucsf.edu/tid/dtf34f00, p. 2.
[303] Harry M. Wootten, "43 Billion Camels Sold in a Year," Printer's Ink, Oct. 31, 1941, p. 20, http://legacy.library.ucsf.edu/tid/mxu51a00.
[304] Harry M. Wootten, "Cigarettes' High Ceiling," Printers' Ink Monthly, 42 (Feb. 1941): 5-8, 56.
[305] H. B. Parmele to Adam Riefner, July 29, 1946, http://legacy.library.ucsf.edu/tid/ltg56b00.
[306] Addison Yeaman (Brown &Williamson) to W. E. McCabe, Dec. 3, 1946, http://legacy.library.ucsf.edu/tid/clb60f00.
[307] Recommendations and Budget for Activities of the Research Department," 1948, http://legacy.library.ucsf.edu/tid/krd38e00.

company, adopting as a slogan: "Get 'em young, train 'em Right."[308]

22. 1952: Brown & Williamson achieves "a partial isolation and identification of a carcinogenic hydrocarbon, benzopyrene," in cigarette smoke—but does not disclose this to the public.[309] Three years later, TIRC Scientific Director Clarence Cook Little is asked (on national television) whether "cancer-causing agents" had been found in cigarette smoke, and replies: "No. None whatever."[310]
23. 1946-53: R.J. Reynolds runs a massive television and magazine advertising campaign, claiming that "More Doctors Smoke Camels."
24. 1952: Kent cigarettes are introduced with the "Micronite" (asbestos) filter, and over the next four years an estimated 15 billion cigarettes are smoked through this filter made from crocidolite "blue" asbestos—even after it had been shown that fibers could be released and inhaled from the filter tips.[311]
25. 1953: In February, Claude Teague completes his "Survey of Cancer Research" for his superiors at R.J. Reynolds, concluding that "The closely parallel increase in cigarette smoking has led to the suspicion that tobacco smoking is an important etiologic factor in the induction of primary cancer of the lung," and that "Studies of clinical data tend to confirm this relationship."[312]
26. 1953: On July 1, Lorillard receives results of the Ecusta Paper Corporation's secret experiments showing it was the tobacco, and not the paper, that was responsible for cigarettes causing cancer.[313] Paul M. Hahn would later testify that prior to 1954, his company had done nothing to prove or disprove smoking-lung cancer claims "except in the continuing investigation of the chemical composition of smoke."[314] American in fact had funded the Ecusta experiments and Hahn had received notification of the results shortly prior to

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308 Joe Cahn (PM), "College Plan For 1949," http://legacy.library.ucsf.edu/tid/ojk78e00/pdf.
309 "Report of Progress—Technical Research Department" (B&W), Dec. 24, 1952, http://legacy.library.ucsf.edu/tid/eyt60f00.
310 Transcript of Edward R. Murrow's Second TV Show on "Cigarettes and Lung Cancer," June 7, 1955, http://legacy.library.ucsf.edu/tid/mmx71e00.
311 For photos of asbestos particles tapped out from Kent's Micronite filter cigarettes, see Owens-Corning Testing Division to Lorillard, June 4, 1953, http://legacy.library.ucsf.edu/tid/weh20e00.
312 Claude E. Teague, Jr., "Survey of Cancer Research, with Emphasis upon Possible Carcinogens from Tobacco." Feb. 2, 1953, http://legacy.library.ucsf.edu/tid/jad76b00.
313 Ecusta Paper Corporation, "Results of Accelerated Animal Tests," June 9, 1953, http://legacy.library.ucsf.edu/tid/yam51e00; data are attached to a letter from Lorillard's J. J. Blacknall, Director of Manufacture, to H.B. Parmele, Director of Research, July 1, 1953, http://legacy.library.ucsf.edu/tid/xam51e00.
314 "Green Depositions," 1960, http://legacy.library.ucsf.edu/tid/vvl96b00, p. 27.

calling the Plaza Hotel meeting in December 1953.[315]

27. 1953: A confidential Roper poll for Philip Morris (in August) shows that when people are asked "What harm, if any, do you think cigarette smoking does to you either mentally, physically, emotionally?" only one percent volunteered "cancer." The study concluded that while roughly half of those polled recognized there was "something harmful" about smoking in the abstract, cancer was "almost never mentioned as a reason for concern over smoking."[316]
28. 1953: Alton Ochsner of Tulane University predicts that by 1970 "one out of every two or three men with cancer will have a cancer of the lung."[317]
29. 1953: Wynder, Graham and Croninger publish their mouse painting experiments (in December), showing that cigarette tars can cause tumors on the shaved backs of mice.[318] Publicity surrounding the paper causes a panic on Wall Street, tobacco stocks fall, and cigarette sales decline—from a peak of 395 billion in 1952 to 389 billion in 1953 and a low of 370 billion in 1954—before recovering to 380 billion in 1955.[319] Total U.S. consumption would nearly double over the next twenty years (the peak is 1982), before it would start to fall.
30. 1953: On December 10, American Tobacco Co. CEO Paul M. Hahn invites the other cigarette CEOs to meet to plan a response to the cancer evidence.[320] Eight chief executives of the leading tobacco companies (all but Liggett) meet at the Plaza Hotel on December 14, and decide to hire Hill & Knowlton

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315 Proctor, *Golden Holocaust*, pp. 210-23.

316 Elmo Roper, "A Study of People's Cigarette Smoking Habits and Attitudes," August, 1953, http://legacy.library.ucsf.edu/tid/rwd56b00, p. XVII; http://legacy.library.ucsf.edu/tid/odh64e00, vol. III, pp. 507-14.

317 Bob Considine, "To Smoke or Not to Smoke," *Cosmopolitan*, April 1954, http://legacy.library.ucsf.edu/tid/grq34f00. Considine also characterizes cigarettes as "votive lamps to the
muse." Cigarettes can in fact cause tuberculosis: in today's India, for example, more people die from cigarette-caused tuberculosis than from cigarette-caused lung cancer; see Prabhat Jha et al., including R. Peto, "A Nationally Representative Case-Control Study of Smoking and Death in India," *New England Journal of Medicine*, 358 (2008): 1137–47.

318 Ernst L. Wynder, Evarts A. Graham, and Adele B. Croninger, "Experimental Production of Carcinoma with Cigarette Tar," *Cancer Research*, 13 (1953): 855–66, http://legacy.library.ucsf.edu/tid/jle54c00.

319 "An Historical Perspective on the Smoking and Health Controversy in the U.S., 1951-1977," in ICOSI, "Working Party on Social Acceptability of Smoking," July 27-29, 1977, http://legacy.library.ucsf.edu/tid/zqf56b00, p. 15.

320 Paul M. Hahn (AT) to E. A. Darr (Reynolds), Dec. 10, 1953, http://legacy.library.ucsf.edu/tid/aka50i00.

to defend the industry against "recent attacks on cigarette smoking."[321] The Plaza Hotel meetings mark the beginning of the conspiracy to hide the harms caused by cigarettes.

31. 1953: John Hill from Hill & Knowlton meets with tobacco executives and research directors at the Plaza Hotel on December 15th. A Hill & Knowlton "Forwarding Memorandum" drafted shortly thereafter quotes one of the research directors exclaiming: "Boy! Wouldn't it be wonderful if *our* company was first to produce a cancer-free cigarette. What we could do to competition!" Another says "It's fortunate for us that cigarettes are a habit they can't break."[322] Internal admissions of cancer causation and addiction ("habit they can't break") thus date from early in the conspiracy—though neither would be disclosed for the duration of the conspiracy.
32. 1953: Also in December, Claude E. Teague, Jr., a PhD chemist at Reynolds, authors a "Disclosure of Invention" of a technique by which chemicals added to a filter would change color upon contact with smoke, leading smokers to believe that harmful agents were being removed by the contraptions fastened to the mouth ends of their cigarettes.[323]
33. 1954: The newly-formed TIRC, established at Hill and Knowlton in the Empire State Building, publishes "A Frank Statement to Cigarette Smokers" in 448 newspapers (circulation 43,245,000) on January 4th. 200,000 reprints are ordered for distribution by the sponsoring companies.[324] The "Frank Statement" claims (falsely) that the statistics invoked to link smoking and cancer "could apply with equal force to any one of many other aspects of modern life" and that "one by one" the charges leveled against tobacco had been "abandoned for lack of evidence." Some of the language is taken from earlier statements by American Tobacco CEO Paul M. Hahn, including a press release issued by the company on Nov. 26, 1953. Subsequent press releases would repeat this claim that medical and scientific opinion remained "widely divided" over whether cigarettes cause harm.[325]

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[321] Memorandum regarding "Tobacco Industry Meeting, New York, December 14, 1953," Dec. 14, 1953, http://legacy.library.ucsf.edu/tid/pop56b00.
[322] Edwin F. Dakin, "Forwarding Memorandum: to Members of the Planning Committee," late Dec. 1953, p. 2, http://legacy.library.ucsf.edu/tid/lho66b00.
[323] Claude E. Teague, Jr., "Disclosure of Invention: Filter Tip Material Undergoing Color Change on Contact with Tobacco Smoke," Dec. 17, 1953, http://legacy.library.ucsf.edu/tid/ude53d00.
[324] TIRC, "A Frank Statement to Cigarette Smokers," Jan. 4, 1954, http://legacy.library.ucsf.edu/tid/ysd1aa00; Fuller & Smith & Ross, "The Tobacco Industry Research Committee: A Report on Expenditures to Date and a Discussion of Possible Additional Media," Jan. 15, 1954, http://legacy.library.ucsf.edu/tid/jld6aa00.
[325] TIRC Press Release, Oct. 12, 1954,

34. 1954: On April 26, the TIRC holds the first meeting of its Scientific Advisory Board, hand-picked by Paul Hahn. The TIRC still has trouble finding a director, and C. C. Little finally agrees to serve, which is announced on June 15.[326]
35. 1954: In April, the TIRC issues its first "white paper," titled "A Scientific Perspective on the Cigarette Controversy."[327] This paper is already being drafted by Tommy Ross, chief counsel for American Tobacco, in December 1953.[328]
36. 1954: Liggett & Myers's research chief, Frederick Darkis, at a Liggett research conference comments that "if we can eliminate or reduce the carcinogenic agent in smoke we will have made progress."[329]
37. 1954: Hill & Knowlton's progress report for the first six months of the TIRC's operations notes numerous revisions of popular news and feature stories on tobacco, including "seven revisions and five qualifying additions" to a story published in *Cosmopolitan*, even though that story "was already in type."[330] The resulting article (by Bob Considine) stresses the "many conflicting reports" and echoes the industry's basic "he said, she said" position, leaving the smoker confused:

> Eminent Authority No. 1 tells him he's giving himself lung cancer by smoking. Eminent Authority No. 2 says bosh, go ahead and smoke. Eminent Authority No. 3 says both No. 1 and No. 2 are right; the trick is to use a filter.

Considine also parrots the industry's view that cigarettes cannot cause tuberculosis because that malady "has been dying out since 1920 in the face

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https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=kzyj0191; compare the TIRC's Press Release from June 4, 1955: https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=lqhg0099.

326 Hill and Knowlton to T. V. Hartnett, "Report of Activities," July 31, 1954, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=sjmn0141

327 TIRC, "A Scientific Perspective on the Cigarette Controversy," April 14, 1954, http://legacy.library.ucsf.edu/tid/twe21a00.

328 Bert Goss (Hill & Knowlton), "Background Material on the Cigarette Client," Dec. 15, 1953, http://legacy.library.ucsf.edu/tid/fbl36b00.

329 R. L. Swaine to R. Stevens, "Liggett & Myers Conference on March 25, 1954," March 29, 1954, http://legacy.library.ucsf.edu/tid/uyl68e00.

330 Hill & Knowlton, Inc., to T. V. Hartnett, "Report of Activities through July 31, 1954," http://legacy.library.ucsf.edu/tid/egt61f00.

of a ten-fold increase in cigarette smoking."[331]

38. 1954: In June, E. Cuyler Hammond, director of statistical research for the American Cancer Society, announces at the AMA convention in San Francisco that it is now proved "beyond a reasonable doubt" that smoking causes lung cancer.[332] Only three months earlier Hammond had been a skeptic, claiming that he would want "very strong proof indeed before I would be willing to state as an absolute fact that cigarettes are responsible."[333] Hill and Knowlton reports that the Hammond report causes "hysteria."[334]
39. 1954: In August, E. Cuyler Hammond in a lecture to the American Pharmaceutical Association says it will "not take too long" ("one or two years") for the tobacco industry to create cigarettes that are safe.[335] Hammond's remarks illustrate the typical over-confidence in the industry's ability to create a "technical fix" for the cigarette-cancer problem. ("single factor" theory).
40. 1955: TIRC Scientific Director Clarence Cook Little appears on Edward R. Murrow's popular "See it Now" TV show, and when asked "have any cancer- causing agents been identified in cigarettes?" responds "No. None whatever, either in cigarettes or in any product of smoking."[336] Elmer Hess, president-elect of the American Medical Association, appears on this same show, claiming with regard to lung cancer: "I don't think smoking cigarettes particularly has anything much to do with it." Asked whether he himself is a smoker, Hess admits that while being a smoker all his life, "I can't see where it's done me a great deal of harm."
41. 1955: Menthol sales skyrocket, with the broader publicity given to cancer hazards. The percentage of cigarettes sold as menthols jumps from about 3

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[331] Bob Considine, "To Smoke or Not to Smoke," *Cosmopolitan*, April 1954, http://legacy.library.ucsf.edu/tid/grq34f00. Considine also characterizes cigarettes as "votive lamps to the muse." NB: Cigarettes can in fact cause tuberculosis; see the 2014 Surgeon General's report.

[332] Does Smoking Shorten Life?" (Interview with E. Cuyler Hammond), *U.S. News & World Report*, July 2, 1954, http://legacy.library.ucsf.edu/tid/jzh92f00.

[333] Hammond is cited in "To Smoke or Not to Smoke," *Cosmopolitan*, March 1954, http://legacy.library.ucsf.edu/tid/xhy47a00.

[334] Hill and Knowlton to T. V. Hartnett, "Report of Activities through July 31, 1954," https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=sjmn0141

[335] "Cancer Society Research Director Says Companies Can Develop Safe Cigarets," *Wall Street Journal*, Aug. 27, 1954, http://legacy.library.ucsf.edu/tid/dzh92f00.

[336] "Transcript of Edward R. Murrow's Second TV Show on 'Cigarettes and Lung Cancer,'" June 7, 1955, http://legacy.library.ucsf.edu/tid/gcn36b00.

percent in 1955 to nearly 30 percent in the mid-1970s.[337] (see **Figure 1**).

42. 1955: Philip Morris researchers learn that Ernst Wynder was not so much "anti-tobacco" as "pro-improved tobacco"—easing his path to earn millions of dollars from the cigarette companies now willing to fund his research.[338]
43. 1956: Reynolds launches Salem, the first mentholated "filter" cigarette. The brand quickly becomes the best-selling menthol cigarette, with total sales of more than 40 billion sticks per year by the early 1960s.[339]
44. 1956: Murray Senkus writes to Kenneth H. Hoover, R.J. Reynolds's director of research, noting that the smoke from Winston cigarettes had been found to have 2.5 times the levels of polycyclic aromatic hydrocarbons (PAHs) as smoke from the company's non-filtered Camel brand.[340]
45. 1957: The U.S. Congress holds hearings on "False and Misleading Advertising" by the cigarette industry, especially with regard to claims made on behalf of filter-tips. Prof. Harry Greene of Yale, testifying for the industry, comments that "If I have a bad cold coming on, I smoke a lot of cigarettes and usually wake up the next morning without the cold."[341]
46. 1957: In internal corporate reports, BAT researchers in England use the code word Zephyr to designate "cancer" and Borstal to designate "benzpyrene.[342]
47. 1957: Ed Darr, President and CEO of Reynolds, writes to Paul Hahn, President of American Tobacco, thanking him for his "bold and courageous action" in forging the industry's alliance:

> You took a bold and courageous action in December 1953 when you called for a meeting of manufacturers and other industry groups to discuss ways and means of presenting a united front against the claims that were being made that cigarette smoking causes lung cancer.

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[337] Vello Norman (Lorillard), "The History of Cigarettes," 1983, http://legacy.library.ucsf.edu/tid/ghr91e00, Fig. 9.
[338] A. E. O'Keeffe to R. N. DuPuis, "Visit to Sloan-Kettering Institute," Oct. 4, 1955, http://legacy.library.ucsf.edu/tid/dpb77e00.
[339] Reynolds, "Salem Review," Nov. 1, 1995, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=lgfl0185.
[340] Murray Senkus to Kenneth H. Hoover, "Monthly Research Report," Nov. 23, 1956, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=zrhb0099.
[341] *False and Misleading Advertising (filter-tip cigarettes). Twentieth Report by the Committee on Government Operations, Legal and Monetary Affairs Subcommittee*, Feb. 20, 1958, http://legacy.library.ucsf.edu/tid/pvp10j00, p. 217.
[342] "A Possible Alternative Hypothesis," Jan. 30, 1957, http://legacy.library.ucsf.edu/tid/nwo10a99.

> There is absolutely no question in my mind that if this Committee had not been formed, the cigarette industry by now would have been in a deplorable position. Instead, a very find job has been done in counteracting unverified, unjustified and unsubstantiated claims of the anti-cigarette fanatics. In other words, the TIRC has been a successful defensive operation.[343]

For decades thereafter, however, the industry would publicly describe the TIRC not as a "successful defensive operation" but rather as proof of the industry's honest efforts to support honest and independent research. Success of the conspiracy in these early years is reflected in the rapid growth of cigarette consumption in the years after the formation of the conspiracy.[344]

48. 1958: The Tobacco Institute is founded as offshoot from the TIRC and begins publication of *Tobacco and Health Research*, pushing non-tobacco causes of disease and casting doubts on "the cigarette theory."
49. 1958: Philip Morris researchers characterize selective filtration of particulates in smoke as "a thermodynamic impossibility."[345]
50. 1958: Three leading British tobacco industry researchers in their "Report on Visit to U.S.A. and Canada, 17th April–12th May 1958" note that "with one exception . . . the individuals we met believed that smoking causes lung cancer if by 'causation' we mean any chain of events which lead finally to lung cancer and which involves smoking as an indispensable link."[346]
51. 1959: BAT researchers caution that that if they "reduce the nicotine per cigarette" beyond a certain point, they "might end in destroying the nicotine habit in a large number of consumers and prevent it ever being acquired by new smokers." With regard to the question of how much nicotine to maintain in cigarettes, there was thus a need to find the "optimum offer."[347]
52. 1959: A Roper poll for Philip Morris reveals that while most of those surveyed had *heard* that smoking had been linked to cancer, nearly 70 percent agreed that "as long as you are careful not to smoke too much, cigarettes won't do you any real harm." Unprompted recall was even lower,

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[343] Edward A. Darr to Paul M. Hahn, July 30, 1957, http://legacy.library.ucsf.edu/tid/ags94f00.
[344] Statement by James P. Richards, President, The Tobacco Institute, Dec. 17, 1959, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=thcg0099.
[345] A. E. O'Keeffe (Philip Morris) to R.N. DuPuis, "Selective Filtration," Sept. 16, 1958, http://legacy.library.ucsf.edu/tid/lgo38e00.
[346] H. R. Bentley, D.G.I. Felton, and W.W. Reid, "Report on Visit to U.S.A. and Canada, 17th April–12th May 1958," June 11, 1958, http://legacy.library.ucsf.edu/tid/pwu05a99.
[347] RDW (BAT), "Complexity of the P.A.5.A. Machine and Variables Pool," June 1959, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=qzpj0199.

with only about one percent mentioning cancer when asked to identify "the trouble with cigarettes."[348]

53. 1960-62: "The Flintstones" is brought to you by Winston cigarettes, with Fred and Barney sneaking around to the back of the garage to smoke, hiding from their "wives." They do this instead of "taking a nap," as one might expect from boys—not grown men.[349] The same company sponsors "The Beverly Hillbillies" in subsequent years.
54. 1961: Larson, Haag and Silvette publish their massive *Tobacco: Clinical and Experimental and Clinical Studies* (aka "the Green Monster"), concluding that there is "no evidence that carcinoma of the lung is produced by tobacco . . . no proof of causation."[350] Research for the book is entirely funded by the tobacco industry, and the book is repeatedly used from that point on as proof of the industry's purported cooperation with public health authorities.
55. 1961: Helmut Wakeham (Philip Morris) in his review of "Tobacco and Health" concludes that "carcinogens are found in practically every class of compounds in smoke."[351] Wakeham lists dozens of carcinogens in smoke, but neither he nor anyone else at Philip Morris (or any other cigarette company) discloses the presence of cancer-causing chemicals in smoke to the general public. A separate list of compounds is provided to the Surgeon General's advisory committee. Wakeham's review represents the end of the "single factor" theory—the (honest) notion from the 1950s that there was some small number of "bad elements" in cigarettes that could be removed, rendering cigarettes completely safe.
56. 1962: J. Morrison Brady, associate scientific director of the TIRC, writes to his superior Clarence Cook Little, describing the industry's public relations woes as "like the early symptoms of diabetes—certain dietary controls kept public opinion reasonably healthy. When some new symptom appeared, a shot of insulin in the way of a news release, a [Joseph] Berkson antidote, a

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348 Elmo Roper and Associates, "A Study of Attitudes toward Cigarette Smoking and Different Types of Cigarettes" (prepared for Philip Morris), vol. 1, Jan. 1959, http://legacy.library.ucsf.edu/tid/ynl02a00.

349 The Flintstones video can be viewed at: http://www.youtube.com/watch?v=mZvHiiWFbBU. The video can be read as two "naughty boys" hiding from their wives (or mothers).

350 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).

351 Helmut Wakeham, "Tobacco and Health—R&D Approach," Nov. 15, 1961, http://legacy.library.ucsf.edu/tid/ehs76b00.

[Milton] Rosenblatt television rebuttal, etc., kept the patient going."[352]

57. 1962: Free samples of Kent cigarettes are handed out at the annual meeting of the National Medical Association ("the largest Negro medical organization in the United States") in Chicago, Illinois.
58. 1962: Alan Rodgman at Reynolds reports to his superiors that while the evidence in favor of cigarettes causing lung cancer is "overwhelming," the evidence against is "scant."[353]
59. 1962: U.S. Surgeon General's Advisory Committee is formed at the request of President Kennedy to explore whether smoking causes cancer and other maladies. Half the 10-member committee is appointed on the recommendation of tobacco manufacturers, and half are smokers.
60. 1963: Lorillard produces an internal report ("Kent and the Physician") stressing the importance of convincing physicians "that if a patient finds it impossible to quit smoking, the patient should at least switch to the best filter cigarette available – Kent with the Micronite filter."[354]
61. 1963: Addison Yeaman at Brown & Williamson admits in an internal memo describing BAT's Hippo I and II projects that "we are, then, in the business of selling nicotine, an addictive drug effective in the release of stress mechanisms." Yeaman also characterizes lung cancer, emphysema, and heart disease as "unattractive side effects" of smoking.[355]
62. 1963: Brown & Williamson decides to withhold Hippo Project data from the U.S. Surgeon General. Hippo data are shared with other industry lawyers; Yeaman sends reports to Henry Ramm of Reynolds, for example.[356]
63. 1963: CTR scientific director Clarence Cooke Little admits to his British counterparts that, with respect to the type of research funded by the CTR, tobacco was "only incidentally considered as one of the possible causes" of

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[352] J. Morrison Brady to C. C. Little, April 9, 1962, "TIRC Program," April 9, 1962, http://legacy.library.ucsf.edu/tid/onk93f00.

[353] Alan Rodgman, "The Smoking and Health Problem: A Critical and Objective Appraisal," 1962, http://legacy.library.ucsf.edu/tid/jxe56b00.

[354] "Kent and the Physician" (for Lorillard), July 2, 1963, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=qnhd0066. Three of ten national medical publications were still accepting cigarette ads in 1963, and Lorillard was here advised to establish *Science Fortnightly*, a general science publication used as a vehicle to sell Kent cigarettes. See also Lennen & Newell, "Recommendations Concerning Science Fortnightly," Oct. 1964, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=nzkw0110.

[355] Addison Yeaman, "Implications of Battelle Hippo I & II and the Griffith Filter," July 17, 1963, http://legacy.library.ucsf.edu/tid/xrc72d00.

[356] Addison Yeaman to Ed Jacob and Henry Ramm, Aug. 5, 1963, http://legacy.library.ucsf.edu/tid/yex95a00; Addison Yeaman to Anthony McCormick, July 3, 1963, http://legacy.library.ucsf.edu/tid/kcm36b00.

the many diseases with which smoking had been associated.[357]

64. 1963: On December 7, the tobacco industry agrees to fund the American Medical Association in exchange for an alliance on matters of smoking and health; on February 7, 1964, the AMA accepts $10 million from the industry to form the Education and Research Foundation (ERF).[358] Maurice H. Seevers, appointed chairman of the AMA's ERF, was 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."[359] The AMA in 1964 refuses to endorse the recent Surgeon General's report, and in subsequent years would side with the industry on many policy issues—opposing warning labels on cigarettes, for example, and a ban on broadcast advertising.

65. 1964: George Weissman at Philip Morris writes to his CEO, Joseph F. Cullman III, insisting with regard to the recent Surgeon General's report that "we must in the near future provide some answers which will give smokers a psychological crutch and a self-rationale to continue smoking."[360]

66. 1964: Howard Cullman, President of the Tobacco Merchants Association, appears on a CBS News Extra program on Smoking and Health (with Harry Reasoner), responding to the Surgeon General's report. Cullman issues yet another promise that if anything bad is ever found in tobacco, the industry is confident it can eliminate "the mysterious thing they are looking for."[361]

67. 1965: Philip Morris researcher Ronald A. Tamol, in handwritten notes dated Feb. 1 detailing arguments for and against a "health cigaret," and affirms the importance of determining the "minimum nicotine req'd to keep normal

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[357] "Minutes of the 49th Meeting of the Technical Sub-Committee of the TRC," Sept. 5, 1963, http://legacy.library.ucsf.edu/tid/nzh84a99.

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

[359] 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, ; and for background, http://legacy.library.ucsf.edu/tid/oel31a00.

[360] George Weissman to Joseph F. Cullman III, "Surgeon General's Report," Jan. 29, 1964, http://legacy.library.ucsf.edu/tid/byg56b00.

[361] http://www.youtube.com/watch?v=akRDStdxwWs.

smokers 'hooked.' "[362]

68. 1966: Myron Johnston at Philip Morris, describing the "Market Potential of a Health Cigarette," comments that "A cigarette that does not deliver nicotine" would "almost certainly fail." Johnston also notes that "the illusion of filtration is as important as the fact of filtration."[363]
69. 1966: John V. Blalock (B&W) in a memo to Addison Yeaman comments with respect to the public's poor understanding of tar and nicotine numbers that "Obviously, the key word is 'confusion,' and anything we can do to confirm such a situation could work to our advantage."[364]
70. 1967: BAT Group R&D Conference in Montreal has as one of its "Assumptions": "If there is no inhaling, there is no lung cancer or respiratory disease."[365]
71. 1967: The American Medical Association issues a press release endorsing the cigarette 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.[366]

65. 1967: The U.S. Federal Trade Commission releases its report on federal cigarette labeling, pointing out that "The belief appears to be widely held that filter cigarettes are less hazardous to health than regular cigarettes." The FTC notes that the word "mild" is widely used "as a euphemism for cloaking the dangers of increased cigarette smoking," and points to themes ignored in cigarette advertising: "the health hazards posed by smoking," for example,

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362 Ronald A. Tamol, "Health Cigaret," Feb. 1, 1965, http://legacy.library.ucsf.edu/tid/rrc76b00. In this same document Tamol talks about a "threshold level" of total particulate matter (tpm). The word after "minimum nicotine" is hard to read, but Tamol himself in a deposition identifies the word as "required."

363 Myron E. Johnston (approved by William Dunn), "Market Potential of a Health Cigarette," June 1966, http://legacy.library.ucsf.edu/tid/diw56b00.

364 John V. Blalock to Addison Yeaman, Oct. 20, 1966, http://legacy.library.ucsf.edu/tid/fuk96b00.

365 S. J. Green, "B.A.T. – R&D Conference – Montreal, Oct. 24-27, 1967," Nov. 8, 1967, http://legacy.library.ucsf.edu/tid/ttm24a99.

366 AMA, "Three-Year Program Stimulates Tobacco-Health Research" (press release), Sept. 5, 1967, http://legacy.library.ucsf.edu/tid/dzs2aa00.

but also the fact that "after a person smokes cigarettes regularly for a while, smoking is no longer a matter of choice . . . but becomes a matter of need":

> 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. In terms of public understanding of the health hazards, knowledge of this aspect of smoking is essential. Only when one realizes that cigarette smoking cannot automatically be stopped and started at will, can he fully understand how dangerous it is even to start. In making a decision on whether to start smoking, youngsters especially have a right to know that once they start, they may never be able to stop. A viewer of cigarette commercials and advertisements would never hear of this aspect of smoking.[367]

66. 1968: Stanley Frank, a sportswriter hired by Tiderock for the Tobacco Institute, publishes an article in the January issue of *True Magazine*, citing 14 authorities in defense of the industry's claim that smoking does not cause cancer. Nowhere is it disclosed that 13 of these 14 authorities have been financed by the industry.[368] This is a typical example of the industry's "third party" strategy: medical authorities are paid to carry water for the industry, and the public is not told who is paying for this expertise.
67. 1968: In March, the *National Enquirer* publishes an article by "Charles Golden" claiming that "Cancer Link is Bunk."[369] "Golden" is none other than Stanley Frank, and the article is just a rehash of his article in the January issue of *True Magazine*. Golden (i.e., Frank) here claims that "39 of the 49 medical experts who testified before the Senate and House Committee on Commerce" in 1965 "disagreed strenuously" with the recent Surgeon General's report. Golden (i.e., Frank) also writes that "only two of the dissenting experts were connected with the tobacco industry," when the reality is that most of those defending the industry were being paid to do so.
68. 1968: William Kloepfer, Vice President for Public Relations at the Tobacco Institute, writes to TI President Earle Clements, commenting that

> Our basic position in the cigarette controversy is subject to the charge, and may be subject to a finding, that we are making false or misleading

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367 Federal Trade Commission, "Report to Congress Pursuant to the Federal Cigarette Labeling and Advertising Act, June 30, 1967," http://legacy.library.ucsf.edu/tid/cii21a00.
368 Stanley Frank, "To Smoke or Not to Smoke—that is Still the Question," *True Magazine*, Jan. 15, 1968, http://legacy.library.ucsf.edu/tid/xso12i00.
369 Charles Golden, "Cigaret Cancer Link is Bunk," *National Enquirer*, March 3, 1968,

statements to promote the sale of cigarettes.[370]

Kloepfer's letter is copied to all members of the industry's powerful Committee of Counsel.

69. 1968: Brown & Williamson plans to award a prize of one million dollars "to any individual, group, organization, or government source who can prove scientifically, beyond all doubt, that cigarettes cause cancer during the next 12 months."[371] Part of the Kool and Viceroy maker's "Project Truth."
70. 1968: Tobacco Working Group is formed by the NCI and tobacco manufacturers to research a "less hazardous cigarette";[372] the cigarette companies allow some of their top researchers to participate, but only on the condition that they a) admit no health harms from smoking and b) participate not as representatives of the companies paying their salaries. Murray Senkus from Reynolds, for example, made his participation contingent on a representation that he was "in no manner accepting the view (1) that present cigarettes are hazardous or (2) that the smoke of such cigarettes causes or contributes to the development of human lung cancer."[373] Senkus also requested that the name of the group be changed (from Less Hazardous Cigarette Working Group) to avoid the implication that cigarettes were hazardous. The TWG was ultimately a failure and an embarrassment, resulting in no benefits to smokers. TWG director, Gio Gori, goes on to work for the tobacco companies. In historical retrospect, the true purpose of the TWG was espionage and obstruction.
71. 1969: Carl G. Thompson of Hill & Knowlton issues a "Procedural Memo" prescribing the kinds of articles that are to appear in the Tobacco Institute's *Tobacco and Health Research* (sent to all American physicians): "The most important type of story is one that casts doubt on the cause and effect theory of disease and smoking. Headlines should strongly call out the point — Controversy! Contradiction! Other factors! Unknowns!"[374]
72. 1969: Brown & Williamson in a presentation to its marketing staff observes

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[370] William Kloepfer to Earle Clements, April 15, 1968, http://legacy.library.ucsf.edu/tid/bse15b00.

[371] Post-Keynes-Gardner, Inc., "Project Truth" (for Brown & Williamson), Oct. 17, 1968, http://legacy.library.ucsf.edu/tid/epe66b00.

[372] "The Tobacco Working Group: Minutes," Oct. 3-4, 1968, http://legacy.library.ucsf.edu/tid/obs92f00.

[373] Murray Senkus (Reynolds) to Kenneth M. Endicott (Director, NCI), March 27, 1968, http://legacy.library.ucsf.edu/tid/elf54e00.

[374] Carl Thompson (Hill & Knowlton) to William Kloepfer (TI), "Tobacco and Health Research Procedural Memo," Oct. 18, 1969, http://legacy.library.ucsf.edu/tid/vxu58b00.

that "Doubt is our Product."[375]

73. 1969: Helmut Wakeham reports to Philip Morris's Board of Directors that a smoker "tends to seek his own level of intake" and that "Even while smoking a single cigarette he adjusts the volume of his puff as he goes down the rod, compensating for the change in the density of the available smoke." Wakeham concludes that "A smoker's intake level is determined by the smoker himself, not by the manufacturer of the cigarets." He also outlines a two-stage (bait and hook) theory for why people smoke: young *nonsmokers* start for "psychosocial reasons," but *confirmed* smokers (i.e., addicted smokers) continue their habit in consequence of "the pharmacological effect of smoke upon the body of the smoker."[376]
74. 1970: Helmut Wakeham writes to Joseph F. Cullman III with regard to the funding of CTR research: "Let's face it. We are interested in evidence which we believe denies the allegations that cigarette smoking causes disease"[377]
75. 1970: In March, in the so-called "Mouse House Massacre," Reynolds fires all 26 of its biological research staff at the company's headquarters in Winston-Salem. Corporate lawyers feared that the team was getting too close to findings that could hurt the company.[378]
76. 1970: *United States Tobacco Journal* comments on a recent Brown & Williamson survey of Los Angeles smokers, finding that "27 percent of smokers who were interviewed felt that diphesmia was related to cigarette smoking"[379]
77. 1971: Federal broadcast ban goes into effect, barring cigarette ads from the airwaves. Tobacco companies increase funding for advertising in magazines and other media, and start funding sports to keep brand names on the air.
78. 1971: Notice from Ralph L. Rowland at R.J. Reynolds clarifies that while company researchers were encouraged to publish on innocuous topics, papers on "polycyclic hydrocarbons, hydrogen cyanide, carbon monoxide and similar materials" were not to be submitted for publication, considering the

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375 John W. Burgard to R. A. Pittman et al., "Smoking and Health Proposal," Aug. 21, 1969, http://legacy.library.ucsf.edu/tid/zqy56b00 and http://legacy.library.ucsf.edu/tid/pzi66b00.
376 Helmut Wakeham, "Smoker Psychology Research," Nov. 26, 1969, http://legacy.library.ucsf.edu/tid/xgw56b00.
377 Helmut Wakeham to J.F. Cullman III, " 'Best' Program for C.T.R.," Dec. 8, 1970, http://legacy.library.ucsf.edu/tid/alz54e00.
378 Proctor, *Golden Holocaust*, pp. 263-64.
379 "Trace Outbreak of Diphesmia to Antismoking Absurdities," *United States Tobacco Journal*, Nov. 5, 1970, http://legacy.library.ucsf.edu/tid/agx09d00 ; compare also the deposition of James Bowling, Dec. 18, 1984, http://legacy.library.ucsf.edu/tid/sma85a00.

company's "intangible legal situation."[380]

79. 1971: BAT researchers exploring the possibility of a "non-inhalable cigarette" recognize that with "no inhalation" there is "no cancer."[381]
80. 1971: Philip Morris CEO Joseph F. Cullman III appears on "Face the Nation," commenting with regard to a recent Royal College of Physicians study (on how smoking reduces birth weights) that "some women prefer having smaller babies."[382]
81. 1972: Fred Panzer (TI) authors "Roper Proposal," describing the "holding strategy" of the industry, involving "Creating doubt about the health charge without actually denying it."[383]
82. 1972: Claude E. Teague at Reynolds drafts a "Research Planning Memorandum" suggesting that "In theory, and probably in fact, a given smoker on a given day has a rather fixed per hour and per day requirement for nicotine."[384] Teague here also points out that for the typical smoker "nicotine is the dominant desire" and "the primary reason smokers smoke."
83. 1972: CTR finances a conference on the island nation of St. Martin, addressing "why people smoke" (Project Carib, aka "the Caribbean Caper"). Tom Osdene of Philip Morris would later characterize this conference as "cluttered up with lawyers."[385]
84. 1972: William Dunn (aka "the Nicotine Kid") at Philip Morris in the draft text for a CORESTA speech characterizes the cigarette as "a dispenser for a dose unit of nicotine" and the pack of cigarettes as "a storage container for a day's supply of nicotine."[386]
85. 1972: The Tobacco Institute premiers its denialist film: "Smoking and Health: The Need to Know," featuring paid industry experts disputing the tobacco-cancer link. A survey commissioned by the Tobacco Institute shortly

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380 Ralph L. Rowland to Managers, Section Heads, "Management Meeting, March 22, 1971," April 20, 1971, http://legacy.library.ucsf.edu/tid/qmj95a00.

381 "Non-Inhalable Cigarette," circa 1971, http://legacy.library.ucsf.edu/tid/ijk86a99.

382 Joseph F. Cullman III, interviewed on "Face the Nation," Jan. 3, 1971, http://www.youtube.com/watch?v=VpwcF3Malj8.

383 Fred Panzer to Horace R. Kornegay, May 1, 1972, http://legacy.library.ucsf.edu/tid/whz50e00.

384 Claude E. Teague, Jr., "Research Planning Memorandum on a New Type of Cigarette Delivering a Satisfying Amount of Nicotine with a Reduced 'Tar'-to-Nicotine Ratio," March 28, 1972, http://legacy.library.ucsf.edu/tid/hct68d00.

385 David G. Felton to Dr. S. J. Green, "Discussion with Dr. T. S. Osdene (Philip Morris Inc.) London, 4th October, 1974," http://legacy.library.ucsf.edu/tid/ltk05a00; and for context, Proctor, *Golden Holocaust*, pp. 376-78.

386 William L. Dunn, "Motives and Incentives in Cigarette Smoking," draft text of speech presented at CORESTA conference in Williamsburg, VA, Oct. 22–28, 1972, http://legacy.library.ucsf.edu/tid/jcl78e00.

thereafter shows that watching the film significantly reduced (by 17.8 percent) the number of people convinced that smoking causes lung cancer.[387]

86. 1973: Claude E. Teague at Reynolds drafts a "Research Planning Memorandum" lamenting how his company was "presently, and I believe unfairly, constrained from directly promoting cigarettes to the youth market." Teague comments that "Realistically, if our Company is to survive and prosper, over the long term, we must get our share of the youth market." He also suggests "new brands tailored to the youth market" and identifies cigarette attributes that will appeal to "pre-smokers" and "learners," including a bland low pH (sub 6) smoke and "some implied risk." Teague also advises "A careful study of the current youth jargon" and "high school American history books and like sources" to find themes that will appeal to youth.[388]
87. 1973: John H. McCain of William Esty Co. (working for Reynolds) writes to J. O. Watson at Reynolds, noting the "real need to become more aggressive against young adult males." McCain also talks about RJR's "current preoccupation with the 'youth' market" and characterizes Marlboro's share among the 14-15 year old segment as "a phenomenal 51.0%." McCain also talks about how "Creating a 'fad' in this market can be a great bonanza."[389]
88. 1974: R. A. Pittman of Brown & Williamson instructs his colleagues to avoid any reference to "young smokers," "young market," or "youth market," and to use instead terms such as "young adult smoker" or "young adult smoking market."[390] The expression "young adult smoker" becomes much more common in the English language after this time, judging from its rapid vertical increase on an Ngram chart.
89. 1974: Lorillard researchers characterize the company's Aqua filter's claims to selectively reduce carbon monoxide as "false and misleading" but also as a "theoretical impossibility."[391]
90. 1975: A. Kay Comer at BAT, commenting on a lecture by Michael Russell,

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387 Anne Duffin to William Kloepfer, "Audience Testing of 'Smoking & Health: The Need to Know," June 29, 1973, http://legacy.library.ucsf.edu/tid/hew93f00.
388 Claude E. Teague, Jr., "Research Planning Memorandum on Some Thoughts about New Brands of Cigarettes for the Youth Market," Feb. 2, 1973, http://legacy.library.ucsf.edu/tid/owq76b00.
389 John H. McCain (William Esty Co.) to J. O. Watson, "RE: NFO Preference Share Data—'Youth' Market," March 8, 1973, http://legacy.library.ucsf.edu/tid/fyy49d00.
390 R. A. Pittman to J. A. Broughton et al., Jan. 24, 1975, http://legacy.library.ucsf.edu/tid/gxq83f00.
391 Alex W. Spears to C. H. Judge and A. J. Stevens, Dec. 13, 1974, http://legacy.library.ucsf.edu/tid/bxp20e00.

concludes that it is "quite correct" to use the word "addiction" with regard to smoking behavior.[392] Creighton about that same time called regular smokers "nicotine dependent": 650008449

91. 1976: Horace Kornegay, President of the Tobacco Institute, writes to the Committee of Counsel, warning them that the American Psychiatric Association was going to be adding a category of "compulsive smoking syndrome" to its *Diagnostic and Statistical Manual*. This was of concern to the industry, given that any classification of tobacco use as a mental health syndrome would mean that "the cost of cessation clinics would be covered by any health insurance contract that included treatment of mental illness."[393] The danger was that smokers wanting to quit could get financial help in this effort, as they already could from programs assisting in overcoming other drug habits. The industry was opposed to any such assistance, recognizing this as contrary to their efforts to keep smokers smoking. Within a couple weeks Kornegay had gotten Richard C. Proctor, chair of Psychiatry at Bowman Gray Medical School, to agree to work with the industry to influence the DSM. Proctor had agreed to write to "a substantial number of his colleagues to object" to efforts underway to classify smoking as a form of dependence." The intermediary in this effort was Colin Stokes of Reynolds, who got Proctor on board for the industry.[394]
92. 1975: Tobacco Institute spokespersons—aka their so-called "Truth Squad"—log over 130,000 miles in 42 states delivering the industry's "no proof of harm" message.[395]
93. 1976: Per capita consumption of cigarettes peaks in the U.S. at about 3000 cigarettes per person per year.[396]
94. 1976: Ernest C. Pepples, a top lawyer for Brown & Williamson, in an internal memo characterizes claims made on behalf of filters as "extraordinary," given that in most cases "the smoker of a filter cigarette was

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[392] A. Kay Comer, "Comments on a Talk Given by Dr. M.A.H. Russell," July 14, 1975, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=hgwn0042.
[393] Horace R. Kornegay to Committee of Counsel, Nov. 4, 1976, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=lnhf0129.
[394] Horace R. Kornegay to Committee of Counsel, Nov. 18, 1976, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=gryv0101.
[395] TI internal video from circa 1975, narrated by William Kloepfer, http://tobsource.com/index.php?option=com_content&view=article&id=437:kloepfer-narrates&catid=108:tobacco-institute-videos&Itemid=38.
[396] Orzechowski and Walker (for Altria, Lorillard and Reynolds), *Tax Burden on Tobacco: Historical Compilation*, vol. 46, June 13, 2012, http://www.taxadmin.org/fta/tobacco/papers/Tax_burden_2011.pdf, p. 3.

getting as much or more nicotine and tar as he would have gotten from a regular cigarette." Pepples also notes that smokers switching to filters had abandoned their regular cigarette "on the ground of reduced risk to health."[397]

95. 1976: Helmut Wakeham and James Bowling are interviewed for the Thames Television documentary "Death in the West," trivializing the harms from smoking. Wakeham compares smoking to eating applesauce, and states that "if the company as a whole believed that cigarettes were really harmful, we would not be in the business."[398]
96. 1977: The conspiracy extends its tentacles overseas, with the formation of ICOSI (the International Committee on Smoking Issues) at Shockerwick House in England in the summer of 1977. The plan is to avoid having companies in different parts of the world be "picked off one by one"; an agreement ("one voice") is forged between Philip Morris, Reynolds, BAT, Rothmans, Reemtsma, and UK companies Gallaher and Imperial, to coordinate efforts to redress the decline in social acceptability (of smoking) while never admitting "a causal relationship between smoking and various diseases."[399]
97. 1978: Paul Eichorn in the research department at Philip Morris comments on the danger of publicizing the presence of radioactive polonium-210 in cigarette smoke, comparing this to "waking a sleeping giant."[400]
98. 1978: R. B. Seligman at Philip Morris cites the characterization of the CTR (by Bill Shinn of Shook, Hardy and Bacon) as a "front" and a "shield."[401]
99. 1978: T. L. Achey of Lorillard in a letter to Lorillard president Curtis Judge comments on the "fantastic" success of the Newport brand in recent years, adding that "the base of our business is the high school student."[402] Judge was pleased with Achey's proposal, affirming his idea of attracting "starters" and "new entrants" to the cigarette market; Achey was to be "congratulated" for his "efforts on behalf of Newport."[403]

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397 Ernest C. Pepples, "Industry Response to Cigarette/Health Controversy," Feb. 4, 1976, http://legacy.library.ucsf.edu/tid/pcz95a00.

398 Helmut Wakeham and James Bowling interviewed for "Death in the West" (Thames Television, 1976), http://www.youtube.com/watch?v=ln204rPdTfQ.

399 "Operation Berkshire," April 15, 1977, http://legacy.library.ucsf.edu/tid/dmv56b00; Neil Francey and Simon Chapman, "'Operation Berkshire': The International Tobacco Companies' Conspiracy," *British Medical Journal*, 321 (2000): 371–74.

400 Paul A. Eichorn to Robert Seligman, June 2, 1978, http://legacy.library.ucsf.edu/tid/evp08e00.

401 R. B. Seligman to CTR File, "Meeting in New York," Nov. 17, 1978, http://legacy.library.ucsf.edu/tid/tlx27c00

402 T. L. Achey to Curtis Judge (Lorillard), "Product Information," Aug. 30, 1978, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=kljp0060.

403 Curtis Judge to T. L. Achey, "Newport," Sept. 11, 1978,

100. 1978: Reynolds's "Mission Statement for Behavioral Aspects of Smoking" articulates that company's need to combat quitting.[404]
101. 1978: Tom Perfetti at Reynolds compares the brain binding sites of nicotine to those involved in addiction to opiates, and identifies nicotine (in an inter-office memorandum) as "an addictive drug."[405]
102. 1978: Raleigh brand managers at Brown & Williamson point out that "Very few consumers are aware of the effects of nicotine, i.e., its addictive nature and that nicotine is a poison."[406]
103. 1979: Dovemead Ltd. in London (Pinewood Studios) agrees to include extensive Marlboro imagery ("the material") in its production of "Superman II" (starring Christopher Reeves) in exchange for payments from Philip Morris.[407] Anne Browder from the Tobacco Institute is later asked about these product placements (by John Stossel, on national television, who has no access to the industry's internal documents) and responds: "You think Philip Morris had something to do with that? . . . . Cigarette manufacturers don't make movies."[408]
104. 1979: The Tobacco Institute launches a preemptive strike on the new Surgeon General's report, released in January of that year on the 15th anniversary of the original report. William S. Dwyer from the Institute denigrates the report as "suspect from the start" and "an insult to serious science."[409] Dwyer's speech also includes a chart depicting a dramatic reduction in sales-weighted average 'tar' deliveries from 1954 through 1978. The Tobacco Institute shortly thereafter characterizes this as "a preemptive strike against the Surgeon General's report" and observes that "we made our presence known to the American public through news coverage. This was the closest the industry has ever come to equal time."[410]
105. 1980s: In an undated handwritten document, Thomas S. Osdene of Philip Morris comments with regard to sensitive scientific documents: "Ship all

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https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=jtkv0121.

[404] "Mission Statement for Behavioral Aspects of Smoking," 1978, http://legacy.library.ucsf.edu/tid/wow59d00.

[405] T. A. Perfetti to D. H. Pehl, "Research Dealing with Nicotine and Enkephalins," Jan. 5, 1978, http://legacy.library.ucsf.edu/tid/axe56b00.

[406] H. D. Steele to M. J. McCue, "Future Consumer Reaction to Nicotine," Aug. 24, 1978, http://legacy.library.ucsf.edu/tid/rsd53f00.

[407] Pierre Spengler (Dovemead) to P. McNally (Philip Morris Europe), Oct. 18, 1979, http://legacy.library.ucsf.edu/tid/abe56b00.

[408] For the Stossel/Browder clip, see http://www.youtube.com/watch?v=Ay3Ts6rmROk.

[409] William F. Dwyer, "Statement," Jan. 10, 1979, http://legacy.library.ucsf.edu/tid/puu92f00.

[410] Horace Kornegay, Tobacco Institute speech from March 1, 1979, http://legacy.library.ucsf.edu/tid/lba35b00.

documents to Cologne . . . Keep in Cologne . . . OK to phone & telex (these will be destroyed)."[411] When deposed about this and other work he did for the company, including contacts with the secret INBIFO research facility in Cologne, Osdene claims Fifth Amendment protection against self-incrimination 135 times.[412]

106. 1980: Paul K. Knopick at the Tobacco Institute (TI) writes a confidential memo to TI Vice President William Kloepfer, recalling a comment by Shook, Hardy and Bacon that "addiction is the most potent weapon a prosecuting attorney can have in a lung cancer/cigarette case. We can't defend continued smoking as 'free choice' if the person was 'addicted'."[413]
107. 1981: Myron Johnston of Philip Morris in an internal memo recognizes that "the overwhelming majority of smokers first begin to smoke while in their teens" and defines "Today's teenager" as "tomorrow's potential regular customer."[414]
108. 1981: An FTC Staff Report reviews the state of popular understanding of tobacco harms in the U.S., and concludes that millions of Americans still know little about the nature and extent of harms caused by smoking.[415]
109. 1982: Claude Teague at Reynolds observes that "Most of those who have smoked for any significant time would like to stop" but that most are unable to do so. He also comments that "we cannot ever be comfortable selling a product which most of our customers would stop using if they could." He also notes that "if the exit gate from our market should suddenly open, we could be out of business almost overnight." And if effective techniques are ever developed to help smokers stop, then the company's options include 1) "Go out of business" and 2) "Find a way to eliminate the desire of smokers to stop smoking."[416]
110. 1982: A Roper poll for the Tobacco Institute finds that only a quarter of the American public regarded smoking as "an addiction," while more than half

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411 Undated document by Thomas Osdene, http://legacy.library.ucsf.edu/tid/ytu82i00.
412 David Phelps, "Tobacco Scientist's Video Causes Stir on Both Sides," *Star Tribune* (Minneapolis), Feb. 18, 1998, http://legacy.library.ucsf.edu/documentStore/q/l/x/qlx29b00/Sqlx29b00.pdf.
413 Paul K. Knopick to William Kloepfer, Sept. 9, 1980, http://legacy.library.ucsf.edu/tid/eok20g00.
414 Myron E. Johnston, "Young Smokers: Prevalence, Trends, Implications, and Related Demographic Trends," March 31, 1981, http://legacy.library.ucsf.edu/tid/nbg56b00.
415 Matthew L. Myers et al. for the Federal Trade Commission, "Staff Report on the Cigarette Advertising Investigation," May 1981, http://legacy.library.ucsf.edu/tid/sxb47b00.
416 Claude E. Teague, Jr., to G. R. Di Marco, "Nordine Study," Dec. 1, 1982, http://legacy.library.ucsf.edu/tid/tjf76b00.

of those polled regarded it as just "a habit."[417]

111. 1982: Cigarette consumption peaks in the U.S. at 640 billion; the subsequent fall is caused by a doubling of the federal excise tax (to 16 cents per pack) and increases in the whole prices charged by manufacturers. The 1982 peak is partly a consequence of pricing, since the early 1980s is also a time when cigarettes were more affordable than at any time before or since.[418]
112. 1983: Lorillard develops a plan to target military personnel, commenting that "the plums are here to be plucked."[419] Military personnel were commonly targeted by cigarette manufacturers; Brown & Williamson, for example, had an entire "Special Markets Department"—with about fifty account managers—devoted exclusively to military sales.[420]
113. 1983: "Rambo" and "Rocky" icon Sylvester Stallone agrees to use "Brown & Williamson tobacco products in no less than five feature films" for a fee of $500,000.[421] Initial schedule of films includes *Rhinestone Cowboy*, *Godfather III*, *Rambo*, *50/50*, and *Rocky IV*.[422]
114. 1984: Colin Greig of BAT comments with regard to Oscar Wilde's characterization of smoking as "the perfect type of a perfect pleasure [because it] leaves one unsatisfied"; Greig comments on this: "Let us hope that they . . . remain unsatisfied. All we would want then is a larger bag to carry the money to the bank."[423]
115. 1984: Ed Horrigan of R.J. Reynolds (the CEO) appears on ABC's "Nightline" with Ted Koppel, claiming that "while we are accused of being associated with heart disease, there have been studies conducted over ten years that would say, again, that science is still puzzled over these forces."[424]

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417 Roper Organization, "A Study of Public Attitudes Toward Cigarette Smoking," July 1982, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=nhkk0000, p. 31.

418 Jeffrey E. Harris, "The 1983 Increase in the Federal Cigarette Excise Tax," in *Tax Policy and the Economy*, vol. 1, ed. Lawrence H. Summers (Cambridge: MIT Press, 1987), http://core.ac.uk/download/pdf/6871123.pdf; John E. Tindall (PM USA), "Cigarette Market History and Interpretation," https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=sqkj0191, p. 3.

419 G. R. Telford to R. D. Hammer et al., "Newport Planning," Jan. 26, 1983, http://legacy.library.ucsf.edu/tid/koh41e00.

420 "Special Markets," Pipeline (May 1983): 3, http://legacy.library.ucsf.edu/tid/kgd81d00.

421 Sylvester Stallone to Bob Kovoloff, April 28, 1983, http://legacy.library.ucsf.edu/tid/cjn76b00.

422 James F. Ripslinger to Sylvester Stallone, June 14, 1983, http://legacy.library.ucsf.edu/tid/hlm56b00

423 Colin Greig, "Structured Creativity Group" (BAT R&D Southampton), 1984, http://legacy.library.ucsf.edu/tid/fsm86a99.

424 Transcript of Ed Horrigan interview with Ted Koppel on ABC's "Nightline," Feb. 2, 1984,

116. 1984: In an April 1984 deposition for *Cipollone*, Lorillard president Curtis H. Judge is asked whether he would continue smoking if he were convinced that smoking causes lung cancer. He is also asked whether he regarded Lorillard's position on smoking and health as important, to which he responds: "tremendously important." Asked (by lawyers for the plaintiffs) "Why?" he replies "I think that's obvious":

> Q: I want to know why you think it's obvious.
> A: Because if we are marketing a product that we know causes cancer, I'd get out of the business. . . . I wouldn't be associated with marketing a product like that.
> Q: Why?
> A: If cigarettes caused cancer, I wouldn't be involved with them. . . . I wouldn't sell a product that caused cancer.
> Q: Why, though? . . . Because you don't want to kill people? . . . Is that the reason?
> A: Yes.
> Q: It would be difficult to live with yourself knowing that you were selling a product that caused cancer. Isn't that correct?
> A: Yes.
> Q: . . . . If it was proven to you that cigarette smoking caused lung cancer, do you think cigarettes should be marketed?
> A: No.
> Q: Why?
> A: I think it's perfectly obvious from my previous testimony. No one should sell a product that is a proven cause of lung cancer.[425]

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http://legacy.library.ucsf.edu/tid/zcq36b00 (exhibited will be the actual video clip).

[425] Deposition of Curtis H. Judge for *Cipollone v. Liggett*, April 27, 1984, http://legacy.library.ucsf.edu/tid/kms07a00, pp. 251-54,. Judge here also claims that he himself would stop smoking, if he were convinced it was causing cancer:

> Q. Sir, if today you were convinced that cigarette smoking caused lung cancer, would you continue to smoke?
> A. No.
> Q. Why?
> A: Isn't that an obvious answer?
> Q. No.
> A: Because I wouldn't want lung cancer (pp. 242-43)

Judge also says he would "hand in my resignation" if Lawrence Tisch were to come to him and say he was "convinced that cigarette smoking caused lung cancer" (p. 261); see also the summary version of this cited in Jones Day's 1986 "Corporate Activity Project," p. 22, http://archive.tobacco.org/Documents/jonesday1.html.

117. 1986: Rebakah S. Dunn from Reynolds' Bowman Gray Technical Center characterizes the appeal of cigarettes as "acceptable rebellion."[426]
118. 1986: Robert Heimann, former president of American Tobacco, testifies in a video-taped deposition that the Surgeon General was "dead wrong" in saying that cigarettes caused bodily harm.[427] He also claims that the "people who know" will tell you that "this whole statistic machine is a reprehensible propaganda campaign, that it is based on spurious statistics and that it is socially irresponsible."
119. 1988: U.S. Surgeon General's report concludes that smoking is addictive;[428] the Tobacco Institute characterizes this in a draft press release as "irresponsible" and "scare tactics."[429]
120. 1988: Attorney J. Michael Jordan from Womble Carlyle (for Reynolds) writes to Shook, Hardy and Bacon, observing that:

> the aggressive posture we have taken regarding depositions and discovery in general continues to make these cases extremely burdensome and expensive for plaintiffs' lawyers, particularly sole practitioners. To paraphrase General Patton, the way we won these cases was not by spending all of Reynolds' money, but by making that other son of a bitch spend all his.[430]

121. 1989: Only one in six CTR grantees says their work has anything to do with the relationship between smoking and health.
122. 1989: Responding to a request from Congress, Philip Morris supplies a list of dozens of films for which "product" (i.e., Philip Morris cigarettes or cigarette ads) was supplied for use in popular movies.[431]
123. 1990: Philip Morris in its *Archetype Project* explores the idea that new

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426 Rebakah S. Dunn, "Camel and the Hollywood Maverick," 1986, http://legacy.library.ucsf.edu/tid/jti61d00.
427 Robert Heimann, videotaped deposition for *Horton vs. American*, Dec. 19, 1986, http://legacy.library.ucsf.edu/tid/upi12i00, pp. 96-101.
428 U.S. Dept HHS, The Health Consequences of Smoking: Nicotine Addiction. A Report of the Surgeon General (Rockville: Office on Smoking and Health, 1988).
429 Tobacco Institute Press Release (draft), "Claims that Cigarettes are Addictive Irresponsible and Scare Tactics," May 16, 1988, http://legacy.library.ucsf.edu/tid/pwa12f00. In final form, the headline was toned down to read "Claims that Cigarettes are Addictive Contradict Common Sense"; see https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=zzjj0191.
430 Mike Jordan to S&H Attorneys, April 29, 1988, http://legacy.library.ucsf.edu/tid/lyw56b00.
431 "List by Year of Movies for which Product was Supplied," 1989, http://legacy.library.ucsf.edu/tid/fbe56b00; John A. Kochevar to Thomas A. Luken, May 18, 1989, http://legacy.library.ucsf.edu/tid/gbe56b00.

recruits could be attracted by identifying smoking as "for adults only"; Gilbert Clotaire Rapaille, a French marketing consultant with expertise in adolescent psychology, develops a series of recommendations for the company that include: "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."[432]

124. 1992: Covington and Burling lists 630 different ingredients that have been added to American cigarettes, along with the total pounds added for each ingredient, some of which (like licorice and ammonia) are in the millions of pounds per year.[433]
125. 1993: Marlboro Menthol Lights are launched; Marlboro Menthols follow shortly thereafter, in 1995.
126. 1994: In February, Arthur J. Stevens of Lorillard retires as Chairman of the industry's powerful Committee of Counsel. The naming of Steven C. Parrish from Philip Morris to replace Stevens is described in internal industry documents as the "Coronation of [the] God King."[434]
127. 1994: In April, CEOs from the major tobacco manufacturers testify under oath before the Waxman Committee in the U.S. Congress that they do not believe that smoking causes cancer or is addictive.
128. 1994: Brown and Williamson purchases the American Tobacco Company. Ten years later, in 2004, R.J. Reynolds purchases Brown and Williamson. When Reynolds purchases Lorillard in 2015, it acquires liability for the top six brands of cigarettes smoked in the U.S. in 1962 topped by Pall Mall, with 72 billion sold that year.
129. 1995: The *Wall Street Journal* publishes "Tobacco Firm Shows How Ammonia Spurs Nicotine Delivery,"[435] for which the authors win the Pulitzer prize.
130. 1997: The fraction of high school students smoking reaches a peak of 37 percent, a figure that has since declined to only 18 percent.[436]

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[432] See "Archetype Project Summary," Aug. 1991, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=tqjm0065.
[433] Covington & Burling, "Sorted by Ingredient," Feb. 24, 1992, http://legacy.library.ucsf.edu/tid/nkk30f00.
[434] "Committee of Counsel Draft Agenda, February 9, 1994," http://legacy.library.ucsf.edu/tid/tgr88h00.
[435] Alix M. Freedman, "'Impact Booster': Tobacco Firm Shows How Ammonia Spurs Delivery of Nicotine," *Wall Street Journal*, Dec. 28, 1995,
[436] USHHS, *Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General* (Rockville: Office on Smoking and Health, 2012),

131. 1997: In March, Liggett becomes the first cigarette maker to admit that cigarettes cause cancer, coincident with a legal settlement that Minnesota Attorney General Hubert H. Humphrey III likens to "busting a street drug dealer to get to the Columbia drug cartel."[437] Liggett agrees to place a warning label on its L&M, Chesterfield and Lark brands stating that "Smoking is Addictive." Philip Morris two years later (in 1999) purchases these brands from Liggett and removes the warning label.
132. 1998: The Master Settlement Agreement between the leading tobacco manufacturers and state attorneys general requires the companies to stop their denialist campaign with regard to addiction and cancer causation.
133. 1999: Liggett sells its Lark, Chesterfield and L&M brands to Philip Morris, which promptly (in May) removes the warning on all such cigarettes that reads "Smoking is Addictive."
134. 2001: *Monograph 13* of the National Cancer Institute concludes that low tar, light, and filter cigarettes offer no health benefit.[438]
135. 2003: A Philip Morris brochure titled "Raising Kids who Don't Smoke" advises parents who smoke: "Don't be afraid to admit that you might have made a different choice had you understood then what you do now."
136. 2004: The FTC reports that annual funding for marketing and promoting cigarettes has reached $12.5 billion per year (in 2002), nearly double the amount spent in 1998. Cigarette makers are still spending $110 million on sponsorship of sporting events (including individual athletes) and giving away 11.1 billion free cigarettes annually—just in the U.S.[439]
137. 2008: The National Cancer Institute calculates that from the 1940s into the new millennium, cigarette manufacturers spent $250 billion to advertise and promote the sale of cigarettes.[440]
138. 2011: The FDA publishes a final rule requiring graphic warning labels on all packs of cigarettes. Several cigarette makers file suit against the FDA for violating their rights to free commercial speech, and a federal court sides

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http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/full-report.pdf, p. 141.

[437] Myron Levin and Sheryl Stolberg, "Tobacco Company Admits Smoking Leads to Cancer," *Los Angeles Times*, March 21, 1997, https://www.latimes.com/archives/la-xpm-1997-03-21-mn-40672-story.html.

[438] National Cancer Institute, *Risks Associated with Smoking Cigarettes with Low Machine-Measured Yields of Tar and Nicotine—Monograph 13* (Bethesda, MD: USDHHS, 2001).

[439] FTC, *Federal Trade Commission Cigarette Report for 2002*, 2004, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=njld0151.

[440] National Cancer Institute, *The Role of the Media in Promoting and Reducing Tobacco Use—Monograph 19* (Bethesda, MD: USDHHS, 2008), p. 11.

with the cigarette makers, vacating the FDA's ruling.

139. 2013: Michael Thun et al. in the *New England Journal of Medicine* report that "the disease risks from cigarette smoking increased in the United States over most of the 20th century."[441]

140. 2014: U.S. Surgeon General's report concludes that cigarettes have killed more than 20 million Americans in the fifty years since the first Surgeon General's report in 1964. The Report also concludes that "The tobacco epidemic was initiated and has been sustained by the aggressive strategies of the tobacco industry, which has deliberately misled the public on the risks of smoking cigarettes." The Report estimates that smoking is responsible for causing over 480,000 deaths per year in the United States.[442]

141. 2020s: Cigarette makers start removing the word "filter" from their packs of cigarettes, suggesting a recognition of the deceptive nature of that label.

142. 2021: FDA authorizes sale of 22nd Century's "very low nicotine" cigarettes, ruling that with "95% less nicotine" they are unlikely to lead to addiction.[443]

143. 2022: As of January, no cigarette manufacturer has admitted any of the following crucial facts:

1) No company has admitted that millions of people have died from smoking cigarettes;
2) No company has admitted that cigarettes kill half their long term users;
3) No company has admitted that filters, lights, and low tars are no safer;
4) No company has admitted lying to the public, or to Congress;
5) No company has admitted forming a conspiracy to hide the hazards of smoking;
6) No company has admitted that the purpose of the TIRC/CTR was to distract from the hazards of smoking;
7) No company has admitted marketing to kids (though Liggett has come close);
8) No company has admitted that advertising causes some young people to take up smoking;

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441 Michael J. Thun et al., "50-year Trends in Smoking-Related Mortality in the United States," *New England Journal of Medicine*, 368 (2013): 351-64.

442 *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General* (Rockville: Office on Smoking and Health, 2014).

443 "FDA Authorizes Marketing of Tobacco Products that Help Reduce Exposure to and Consumption of Nicotine for Smokers Who Use Them" (press release), Dec. 23, 2021, https://www.fda.gov/news-events/press-announcements/fda-authorizes-marketing-tobacco-products-help-reduce-exposure-and-consumption-nicotine-smokers-who.

9) No company has admitted manipulating the chemistry of nicotine to create and sustain addiction;
10) No company has ever admitted that cigarettes are as addictive as heroin or cocaine;
11) No company has ever admitted that most people who smoke are addicted;
12) No company has admitted that most smokers would like to quit, and regret having started;
13) No company has admitted that nicotine addiction causes disease, suffering and death;
14) No company has admitted that the cigarettes sold today are as deadly and addictive as any ever sold.

And no company has ever apologized for any of the above.

* * * * *

NB: I charge a fee of $6000 per day for testimony, at trial or in deposition. I charge this same daily rate for travel days, and $750 per hour for whatever research or preparation I may do prior to trial. I also charge a non-refundable retainer of $10,000 for agreeing to testify in a case.

DECLARATION OF LOUIS M. KYRIAKOUDES, Ph.D.

I, Louis M. Kyriakoudes, Ph.D., declare as follows:

1. My name is Louis M. Kyriakoudes. My address is 3035 Hartford Dr, Murfreesboro, TN 37129.

2. The opinions rendered in my expert report (attached to this declaration) represent my opinions, all held to a reasonable degree of professional certainty, and are based on a reasonable professional probability and scientifically reliable evidence.

   As I stated in my expert report "significant portions of the smoking public were uninformed or skeptical as to the risks of smoking into the 1980s and 1990s" (see p.76). As I quote in my report, "the 1989 Surgeon General's Report concluded that 'despite impressive gains in public knowledge [over the period 1964-1989], substantial numbers of smokers are still unaware of or do not accept important health risks of smoking.'" (see p.77).

   In 1994, not only did the CEO of Philip Morris sit before Congress and testify that smoking was not addictive, and that there was no proven causal link between smoking and disease, but industry experts and physicians (under the pay of the tobacco industry) continued to make similar representations to the public.

   Ordinary users of cigarettes did not understand the magnitude of the risk, or, in other words, how dangerous cigarette use was. Even if some users thought that cigarettes "might" or "could" or "can" cause disease, the industry successfully convinced the public that the risk was much lower than it actually was.

   Even today the public underestimates how dangerous cigarettes are; people do not understand that as many as one of every two habitual smokers will die of smoking.

   Ordinary users of cigarette since the 1990s and onward believed that filter on cigarettes lowered the risk of disease. Even some public health experts in the 1990s believed this to be true, but the industry knew that it was not. The industry had been studying "compensation" smoking for decades and had not shared that information with the public. Because of how smokers unconsciously "compensated" in reaction to the cigarettes, there is evidence that filters increase the risk of harm, and this was not known to ordinary cigarette users.

Ordinary users of cigarette since the 1990s and onward were unaware of the alternative cigarette designs available to the cigarette companies, including cigarettes with nicotine below the addiction threshold, cigarettes that were not as inhalable, and cigarettes that were not combustible.

Regret studies from the 2000s reveal that most smokers thought that they would not continue their smoking into adulthood. Smokers thought that they could easily quit, well before their health was impacted. They did not understand how addictive cigarettes were. In addition, they didn't understand that some manufacturers had developed technology to free-base the nicotine. The first successful cigarette to implement that technology was Marlboro, the cigarette Sandra Camacho began smoking in 1990. Ordinary users of cigarettes (and the public health experts) had no idea in 1990 that Philip Morris was altering its cigarettes through free-basing to make them more addictive.

3. I reserve the right to amend my opinions if further information is provided in any form.

Pursuant to NRS 199.120, under penalty of perjury, I declare that I have read the foregoing document and that the facts stated in it are true.

Dated: June 6, 2022.

Louis M. Kyriakoudes, Ph.D.
Director, The Albert Gore Research Center
Professor of History
Middle Tennessee State University

HISTORICAL ANALYSIS OF PUBLIC AND TOBACCO INDUSTRY KNOWLEDGE OF THE HEALTH HAZARDS OF SMOKING, AND INDUSTRY DESIGN, ADVERTISING, MARKETING, AND PROMOTION OF CIGARETTES IN THE UNITED STATES

In the matter of Sandra Camacho, et al. v. Philip Morris, USA, Inc. et al. District Court, Clark County, Nevada. Case No. A-19-807650-C

Louis M. Kyriakoudes, Ph.D.
Director, The Albert Gore Research Center
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I am a tenured Professor of History at Middle Tennessee State University, where I teach and conduct research on the economic, social, and business history of the 19th and 20th Century United States. I earned a doctoral degree in history from Vanderbilt University and held a National Institute of Child Health and Human Development postdoctoral training appointment in demography at the Carolina Population Center at the University of North Carolina at Chapel Hill. I am the author of a peer-reviewed monograph, an edited volume of scholarly essays, and numerous peer-reviewed studies, including studies of the history of cigarettes, which have been published in scholarly journals, as listed in my curriculum vitae appended to this report. I have conducted extensive research into the history of cigarettes and the cigarette industry including the history of tobacco cultivation, curing, and production; the history cigarette design and production; the history of cigarette consumption; public knowledge and perception over time of the health dangers of cigarette smoking; industry knowledge of the dangers of cigarette smoking; history of cigarette marketing, advertising and disinformation and their impact over historical time on public perception of cigarettes and smoking; cigarette smoking as a cultural phenomenon, including social smoking patterns, "common knowledge" and uncertainty among the public regarding smoking hazards, including addiction, and the cigarette industry's role in creating, fostering, and maintaining an environment of doubt, uncertainty and confusion as to the health dangers of cigarette use. I have been recognized as an expert on these issues in state and federal courts of the United States, including state courts in California, Florida, and New York; and federal courts in Arkansas, Florida, and Missouri. A list of my educational credentials, publications, and cases in which I have given sworn

testimony is contained in my curriculum vitae, appended to this report. I am compensated at the rate of $550 per hour for case-specific activities and consultation, and $4,400 per day in whole or in part for deposition and trial testimony.

METHODOLOGY

In this report, I have followed the research methods normally employed by historians and other social scientists generally, including those who study the tobacco industry and the history of tobacco in American life. This report employs the same historical research methods generally accepted among professional historians and that I pursue in my peer-reviewed publications, including my publications exploring the history of cigarettes and tobacco.[1] Specifically, this involves research grounded in the primary sources found in various physical and digital archives, libraries, and research centers. In my many years studying the tobacco industry and the role of tobacco in American life, I have conducted research at the Library of Congress, American Medical Association Archives, Boston Public Library, as well as at the archives and special collections of Duke University, Tulane University, University of California-Santa Barbara, University of California-San Francisco, University of North Carolina-Chapel Hill, University of Southern Mississippi,

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[1] Louis M. 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, no. suppl 4 (December 1, 2006): iv107–16, https://doi.org/10.1136/tc.2005.014076; "The Grand Ole Opry and Big Tobacco: Radio Scripts from the Files of the R. J. Reynolds Tobacco Company, 1948 to 1959," Southern Cultures, http://www.southerncultures.org/article/grand-ole-opry-big-tobacco-radio-scripts-files-r-j-reynolds-tobacco-company-1948-1959/; and "The Tobacco Industry's Deadly Distortions of History," Tobacco Control 25, no. 5 (September 1, 2016): 491–491, https://doi.org/10.1136/tobaccocontrol-2015-052712.

Wisconsin Historical Society, and other archives and research centers that hold collections that document the history of tobacco in American life. Government documents and reports, including congressional hearings, shape policy and stand as important primary sources. However, the most important primary sources on the history of tobacco in American life are the formerly secret internal documents created by the tobacco industry that have been produced in civil litigation and maintained by the manufacturers as per the Master Settlement Agreement (see http://tobaccoarchives.com/). These documents are also available at a comprehensive digital archive maintained by the Truth Initiative (formerly the American Legacy Foundation) and the University of California-San Francisco at this web address: https://www.industrydocuments.ucsf.edu/tobacco/.

This report also relies on peer-reviewed scholarship. All scholarly and scientific research builds upon previous work. My own tobacco history research has been subjected to the rigors of peer review. I have peer-reviewed tobacco scholarship for the journals Tobacco Control, Isis (the Journal of the History of Science Society), Lung Cancer, and the American Journal of Public Health as well as Harvard University Press.

Scholars and social scientists have developed a set of standard research methodologies for investigating the massive online tobacco industry archive which by last count contained more than more than 60 million pages. Those methodologies employ a combination of search techniques: by keyword, proximity, and various metadata and descriptor

assignations. My research practices are consistent with these generally accepted methods.[2]

Addressing conflicting evidence is woven into the fabric of historical research. In this report, for example, I address the issue of cigarette sampling of underage children. Manufacturers maintained policies against such a practice in the 1960s onward. But there is also evidence that such policies were regularly disregarded and unenforced. I present all the evidence, offering my opinion as to the most historically accurate explanation to a reasonable degree of certainty as I approach conflicting and complex evidence. In this regard, my opinions in this report are in line with the broad field of tobacco scholarship and science.

I have also reviewed the interrogatories and depositions of Sandra Camacho and her husband, Anthony Camacho.

Finally, this is a brief report that represents a small portion of the research I have conducted over many years. The evidence presented here is representative of a larger body of research I have conducted.

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[2] Ruth E. Malone and Edith D. Balbach, "Tobacco Industry Documents: Treasure Trove or Quagmire?" Tobacco Control 9, no. 3 (September 1, 2000): 334–38, https://doi.org/10.1136/tc.9.3.334.

SUMMARY OF OPINIONS

1. To properly investigate the history of public knowledge of the health dangers of cigarette use and the expectations of cigarette consumers as to how the product operates, historians must review the relevant historical record contained in the formerly secret files of the tobacco industry. These sources document industry efforts at suppression and concealment of information that affected public knowledge. These sources also document information put before the public, particularly transcripts of broadcast radio and television programs discussing smoking and health, that exist in no other historical archive. These sources also document the tobacco industry's extensive research into the smoker's knowledge and expectations about the industry's products. Any analysis that that ignores the historical record contained in the formerly secret files of the tobacco industry fails to satisfy the basic methodological standards of professional historical research.
2. For much of the 20th century, cigarettes have been the most heavily promoted and advertised of all consumer goods. The tobacco industry's extensive advertising, marketing, and promotion efforts stand as the single most important factor in the rise of cigarette smoking, working to create a cigarette culture where the general public viewed smoking as a normal, safe, and desirable social practice.
3. There was little knowledge among the American public that cigarette smoking caused lung cancer, emphysema, and other deadly diseases before 1950.

4. Beginning in the early 1950s, scientific studies implicating cigarettes as a cause of lung cancer received wide coverage in new media prompting what the tobacco industry dubbed a "cancer scare."
5. In response to the publicity surrounding the science implicating cigarette use as a health hazard, tobacco manufacturers and their agents conspired to dispute information that cigarette smoking could be hazardous to health and could lead to serious injury, including cancer and premature death, and that cigarette smoking is addictive.
6. Cigarette manufacturers conspired to sponsor oppositional science to persuade government regulators, members of the public health community and the general public that cigarettes did not cause disease, disability, and death.
7. Cigarette manufacturers conspired to spread disinformation about the true hazards and risks of cigarette use. This disinformation, which directly contradicted the industry's own secret internal knowledge that cigarette use caused addiction and deadly disease, was widely disseminated across the United States and in Florida. Disinformation was disseminated directly by the cigarette manufacturers and their representative organizations, Tobacco Industry Research Committee (later renamed Council for Tobacco Research) and the Tobacco Institute, as well as through their public relations representatives and other agents, and through a variety of means, such as newspapers, magazines, and other mass media, books, and on television, news programs, and sworn testimony before Congress. This carefully planned, well-organized and well-financed effort to persuade the American

public that the cigarette was not the cause of serious disease sharply inhibited the growth of public knowledge on the health hazards of smoking. Cigarette manufacturers continued to deny that cigarettes caused any disease or were harmful to health and that they were addictive well into the 1990s.

8. The tobacco industry's disinformation efforts were undertaken while the cigarette manufacturers possessed extensive knowledge that cigarettes were, in fact, addictive and the cause of serious disease, injury, and death to smokers. This information was concealed from the public, the scientific and public health communities, and government officials.
9. The cultivation, curing, and processing of tobacco enhanced both its addictive qualities and health dangers. The application of heat in the curing of the leaf through flue- curing and sun-drying techniques created a milder tobacco with an easily inhaled smoke. Cultivation practices, including the application of nitrate and phosphate fertilizers, and curing technologies that relied upon propane-fueled open flame burners for curing, introduced and/or enhanced the presence of harmful components in tobacco smoke such as tobacco-specific nitrosamines and polonium. Manufacturing process enhanced smoke inhalability and nicotine impact through the addition of various additives such as sugars, cocoa, acetaldehyde, ammonia compounds, menthol and other flavorings and additives. Cigarette manufacturers had knowledge of these dangers but did not inform the public.
10. Cigarette manufacturers researched extensively the role of nicotine addiction in sustaining cigarette use. Furthermore, cigarette manufacturers modified their

products to enhance nicotine "kick" or "satisfaction," industry terms used to indicate smoker satisfaction of nicotine addiction. This information was concealed from the public, the scientific and public health communities, and government officials.

11. All the major cigarette manufacturers developed products, such as filter and low-tar and light cigarettes, which were either explicitly or implicitly promoted as healthier and safer smoking products, even as the manufacturers possessed knowledge that such developments offered little or no health protection. This information was concealed from the public, the scientific and public health communities, and government officials.
12. The leading cigarette manufacturers marketed their products to children under the age of eighteen through direct contact via sales staff, distribution of free cigarettes, advertisements and product placements in movies, and youth-directed advertisements featuring entertainment celebrities, sports stars and cartoon characters, and themes appealing to youth. Furthermore, the industry studied the habits and beliefs of children under the age of eighteen to more effectively refine their efforts to promote smoking among children.
13. While public knowledge and understanding of the health risks of smoking did increase after 1950, it did so only slowly due to the misinformation and propaganda efforts of the tobacco industry which retarded the growth of public knowledge and understanding of the health dangers of smoking. A significant portion of the smoking public was unaware or did not believe the fact that cigarette use

shortened life, caused physical dependence and addiction, or was the cause of serious disease. Many smokers turned to filters, low tar, light, ultra-lights and menthol cigarettes out of a belief that these were safer. The typical consumer of cigarettes did not understand that their smoking could cause grievous harm to their health including premature death.

14. In 1988, the United States Surgeon General determined that cigarette-delivered nicotine was as addictive as heroin and cocaine. The World Health Organization defines nicotine addiction as a "maladaptive drug-seeking behaviour, often performed despite knowledge of negative health consequences" of smoking [World Health Organization, Gender, Women, and the Tobacco Epidemic (2010), p. 141].
15. Federal regulation under the Family Smoking Prevention and Tobacco Control Act (2009) has not curtailed the marketing, advertising, and promotion of cigarettes.
16. Cigarette use has inflicted enormous human and economic costs on the United States. In the fifty years since the release of the 1964 Surgeon General's Report on Smoking and Health, the United States has seen 20 million premature deaths caused by cigarette smoking.
17. As cigarette manufacturers move into new nicotine-delivery technologies, they continue the business model that they developed in the 20th century of selling addiction. Consequently, the United States faces another epidemic of nicotine addiction, especially among young people under the age of eighteen, unraveling years of public health progress.

18. Sandra Camacho, born in 1946 in Chicago, resided in the Chicago metropolitan region until moving to Las Vegas, Nevada around 1990. Ms. Camacho began smoking at age eighteen, and smoked L&M cigarettes regularly until switching to Marlboro in 1990, and later, Basic cigarettes before quitting in 2018 upon receiving a diagnosis of cancer. The tobacco industry disseminated disinformation promoting tobacco and challenging the science that cigarettes caused disease and addiction nationally and in the communities in which Ms. Camacho lived and She relied upon these statements.

THE RISE OF CIGARETTES

An understanding of the historical context of the rise of American cigarette use is necessary for developing an appraisal of the levels of public knowledge of the adverse health consequences caused by and addictive properties of cigarette use, the role of the cigarette industry in shaping that knowledge, the industry's actions in developing addictive nicotine-delivery products, and the industry's marketing and promotion efforts in the United States.

In the 1880s, cigarette pioneer James B. Duke employed new cigarette-rolling machinery developed by James Bonsack to automate cigarette production, thus eliminating the need for expensive and laborious hand-rolling methods of manufacture. Duke quickly came to dominate the cigarette industry through his American Tobacco Company until it was dissolved by Federal anti-trust action in 1911.

The rising popularity of machine-made cigarettes sparked an organized cigarette prohibition movement, led by Lucy Page Gaston and the Anti-Cigarette League. The anti-cigarette movement had close ties to alcohol prohibition organizations such as the Anti-Saloon League and the Women's Christian Temperance Union. The movement had some success in promoting state-level restrictions on cigarettes. Beginning with Washington State in 1896 and ending with Utah in 1921, sixteen southern and western states eventually passed some type of ban on the sale or possession of cigarettes.

The Anti-Cigarette league's chief criticisms of cigarettes were moral: they corrupted youth, promoted delinquency, and were a gateway to alcohol use. The movement's successes were short-lived. By the 1920s all state cigarette prohibition laws had either been struck down by the courts or repealed.[3] By 1935, the American Tobacco Co., citing the success of its efforts to change public attitudes towards smoking, boasted:

> But probably the greatest single influence on the growth of cigarette-consumption (sic) has been the dissipation of the ancient prejudice against tobacco in this particular form, and a growing belief that cigarettes—being "milder" than other forms of tobacco smoking-are less "injurious."[4]

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[3]Cassandra Tate, Cigarette Wars The Triumph of "The Little White Slaver" (New York: Oxford University Press, 1999), 148, 159-60.

[4] American Tobacco Co., "Improving the Taste and Character of Cigarette Tobacco, with a View to Removing Irritants and Producing a Light Smoke: A Chapter In Laboratory Research.," December 9, 1935, American Tobacco Co. Records, Truth Tobacco Industry Documents, https://www.industrydocuments.ucsf.edu/docs/#id=lfyb0010.

The animus against cigarettes faded quickly during World War I. United States troops in France smoked cigarettes at the encouragement of the Army. Cigarettes were more portable than pipes and cheaper than cigars. U.S. military leaders saw cigarettes as more healthful than chewing tobacco, with its attendant spitting and potential for spreading lung diseases such as tuberculosis in the close-quartered conditions of trench warfare. Private relief organizations such as the Salvation Army and YMCA saw cigarettes as an alternative to alcohol and distributed cigarettes to the troops, even as they worked to limit the troops' access to alcohol. The American Tobacco Co. quickly established "Smokes for Soldiers" funds across the nation which raised funds to purchase cigarettes for the troops. Voluntary efforts followed the American Tobacco Co.'s lead. The "Army Girls' Transport Fund," and other voluntary groups raised funds to supply U.S. troops with tobacco and cigarette rations.[5] Hundreds of thousands of U.S. troops returned from military service addicted to cigarettes. After the war, alcohol prohibition advocates, satisfied that the evil of drink had been vanquished by national prohibition, dropped their objection to the cigarette, and the anti-cigarette movement slipped into obscurity.

The connection between military service and smoking continued after World War I. Cigarettes were widely distributed through military channels, provided to soldiers during World War II and after through their field rations (K-rations and C-rations). Cigarettes

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[5] Tobacco (November 14, 1918), 7; Boston Daily Globe (October 9, 1917), 8; New York Times (May 18, 1918), 14.

were also widely available through military Post Exchanges and distributed for free by the leading cigarette manufacturers. During World War II, Liggett and Myers advertised to the nation that it "sends to our fighting men overseas each and every week a million Chesterfields absolutely free."[6]

Tobacco manufacturers introduced changes in the design of cigarettes which made them more popular and more addictive. New more easily inhalable cigarette designs, pioneered by R.J. Reynolds' Camel in 1913 produced a lighter, milder smoke intended to be inhaled into the lungs, thus delivering nicotine in a more potent manner.[7] Cigarettes, unlike cigars, are, in the testimony of an R.J. Reynolds vice-president, "designed to be lit and inhaled."[8] Camel's remarkable success was followed similarly designed products introduced by American Tobacco's Lucky Strike, Liggett & Myers's Chesterfield, and Lorillard's Old Gold.

American consumption of machine-made cigarettes exploded in the wake of the introduction of the Camel cigarette. Bolstered by aggressive, national advertising and marketing campaigns, cigarettes surpassed pipes, cigars, and chewing tobacco as the primary means by which Americans consumed tobacco in 1924, as consumption of cigarettes rose

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[6]"The Passing Parade," Radio program, broadcast May 24, 1944 on CBS radio," http://legacy.library.ucsf.edu/tid/mvi37a00.

[7]Nannie M. Tilley, The R.J. Reynolds Tobacco Company (Chapel Hill: University of North Carolina Press, 1985), 203

[8]Deposition of Christopher John Cook, Ph.D., April 24, 2009, In Re: Engle Progeny Cases, Tobacco Litigation Case No. 2008 Ca 80000. Pertains To: Martin, Case No.: 2007-Ca 2520 (First Judicial District, Escambia County, Fla.), 68, line 17.

from a mere 54 cigarettes per person (aged 18+) per year in 1900 to a peak of 4,345 cigarettes per person per year in 1963 (figures 1-3).[9]

CIGARETTE ADVERTISING CREATED A SMOKING CULTURE

For much of the 20th century, cigarettes have been among the most heavily promoted and advertised of all consumer goods. Cigarette advertising promoted the act of smoking itself, appealing to broad segments of the American population, including minors under the age of eighteen, women, and minority groups. Cigarette advertising created a cigarette culture where the practice of smoking became a socially acceptable activity by depicting smoking as a glamorous, pleasurable, desirable, and harmless activity.

American society was awash in cigarette advertising. Philip Morris boasted in its 1954 annual report to its stockholders that some 6.7 billion "advertising messages were delivered to America during 1954 by our radio and television programs and extensive newspaper and magazine coverage" for its Philip Morris and Parliament brands, alone.[10] Prior to 1971, when domestic broadcast advertising ceased, cigarette manufacturers were the dominant television advertiser, sponsoring 45 percent of all programs broadcast on

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[9]American Tobacco Company, "Sold American!"—The First Fifty Years (New York: American Tobacco Co. 1954), graph on p. 93. Measurement standard is per capita consumption of tobacco, in pounds; United States Department of Health and Human Services, Reducing the Health Consequences of Smoking: 25 years of Progress, A Report of the Surgeon General, 1989 (Rockville, MD: Office on Smoking and Health, 1989), 268. In comparison, a two-pack per day smoker would consume 14,600 cigarettes in a year.

[10]Philip Morris, Annual Report (December, 1954), 9.

prime-time television in the early 1960s.[11] By 1970, the tobacco industry as a whole was spending US$ 361 million (or US$2.2 billion in 2010 dollars) a year on marketing and advertising its products.[12] R.J. Reynolds and its subsidiary companies (American Tobacco and Brown and Williamson) alone spent $64.8 billion in inflation-adjusted dollars advertising its products during the period, 1951-1996 (figure 4). During the period 1940-2005, the cigarette manufacturers spent $250 billion (in 2006 dollars) promoting and advertising their tobacco products.[13] Assessing the ubiquity of cigarette advertising in the late 1960s, the Federal Trade Commission concluded that "cigarette advertising reaches virtually all Americans who can either read, or understand the spoken word" and that "so pervasive is cigarette advertising[,] that it is virtually impossible for Americans of almost any age to avoid cigarette advertising."[14]

The resources deployed by the tobacco industry enticing people to smoke dwarfed those of the government and public health community. The Federal Trade Commission

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[11]P. Lorillard Co., "Network Television Review 1962" (1962), Bates: 04413141-04413186, http://tobaccodocuments.org/lor/04413141-3186.html.

[12]Federal Trade Commission, "Report to Congress, Pursuant to the Federal Cigarette Labeling and Advertising Act for the Year 1979" (Released September 3, 1981), Tobacco Institute, Bates No. TIMN0101735/1761, http://legacy.library.ucsf.edu/tid/udn92f00, Table 6.

[13]National Cancer Institute, The Role of the Media in Promoting and Reducing Tobacco Use: Tobacco Control Monograph No. 19 (Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute, June 2008), 11.

[14] Federal Trade Commission, "Report to Congress, Pursuant to the Federal Cigarette Labeling and Advertising Act" (June 30, 1967).

observed that in 1978 the tobacco industry spent in one day an amount equal to the Federal Government's entire budget for the Clearinghouse on Tobacco and Health, its principal agency charged with informing the public of the harms of smoking.[15]

Cigarette manufacturers have been leaders and innovators at each juncture in advertising technique and technology. Cigarette packaging itself has served as a powerful component of the industry's marketing efforts. In the 1870s, cigarette firms pioneered the use of printed cards with the images of sports figures, actresses, and other subjects, to sell their products. The cards stiffened the cigarette packages, protecting the cigarettes, but also served to make the pack itself part of the advertising and marketing effort. In the 1910s, the R.J. Reynolds Tobacco Co. introduced the standard twenty cigarette pack and the ten-pack carton. Other innovations such as cellophane wrapping in the 1930s and flip-top cardboard boxes in the 1950s, special holiday-themed artwork on cartons focused marketing attention on the packaging of cigarettes. The tobacco industry systematically studied the effectiveness of packaging as an advertising medium to ensure maximum consumer impact.[16]

Tobacco manufacturers made early use of newspapers, nationally-distributed magazines, and later, nationally broadcast radio and television programming to advertise and promote the use of their products. They were early adopters of nationally-distributed

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[15]Matthew Myers, et al., "Staff Report on Cigarette Advertising, Public Version (Federal Trade Commission, 1981), 2-3.

[16]M. Wakefield, et al., "The Cigarette Pack as Image: New Evidence from Tobacco Industry Documents," Tobacco Control (2002): supplement, i73-i80.

magazines such as Literary Digest (1890) and Time (1923) as vehicles for reaching national audiences in the promotion of tobacco products. In the 1920s-1950s, tobacco manufacturers were leading sponsors of nationally-broadcast radio programs, including "Your Lucky Strike Hit Parade," "The Grand Ole Opry" and many others. In the 1950s. Chesterfield sponsored leading radio and television programs such as "Chesterfield Supper Club" hosted by Perry Como, and Jack Webb's "Dragnet." A procession of celebrities from professional sports, cinema, and musical entertainment: Willy Mays, Ronald Reagan (in the actor phase of his career), Bob Hope, Bing Crosby, Gregory Peck, and many others promoted cigarettes. See Appendix I, figure 1 for representative examples.

Cigarette commercials were a staple on radio and broadcast television. Tobacco billboards dominated outdoor spaces; point-of-purchase displays promoted cigarettes and smoking in stores, markets, restaurants and other businesses. Transit advertising on city buses, taxicabs and other forms of public transportation meant that cigarette advertisements would be seen by the entire general public, including children. After the ban on advertising on broadcast media, tobacco manufacturers paid to place their products in movies. Direct mail, themed products, coupon discounts, and most recently, internet marketing have all been staples of cigarette marketing efforts.[17]

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[17]The American Tobacco Company, "Sold American!"—The First Fifty Years (1954); Louis M. Kyriakoudes, "The Grand Ole Opry and Big Tobacco: Radio Transcripts from the Files of the R. J. Reynolds Tobacco Company, 1948 to 1959,"Southern Cultures 12 (2006): 78-91; National Cancer Institute, The Role of the Media in Promoting and Reducing Tobacco Use: Tobacco Control Monograph No. 19 (Bethesda, MD: U.S. Department

Government regulatory efforts to restrain cigarette advertising in the interest of public health had little effect upon the overall effect upon the industry's marketing and promotional efforts. After Federal legislation banned cigarette advertisements from broadcast radio and television, the tobacco industry further increased its marketing, promotion, and advertising resources devoted to print advertising, outdoor/billboards, point-of-purchase displays, discounts, transit advertising, direct mail, and sponsorship of sports and other public events. By 1980, nearly half of all billboards in the United States advertised cigarettes, many targeting urban, inner-city and minority populations. A marketing report prepared for R.J. Reynolds, for example, concluded that black consumers were "less educated and more likely to be among the large segment of functionally illiterate; hence their readership and purchase of magazines and newspapers are low." To target these consumers, heavy investments in outdoor, out-of-home advertising were recommended.[18]

Philip Morris sponsored Formula I racing and women's professional tennis; R.J. Reynolds sponsored NASCAR racing, creating the Winston Cup, and KOOL cigarettes sponsored prominent jazz festivals.[19]

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of Health and Human Services, National Institutes of Health, National Cancer Institute, June 2008).

[18] The Black Menthol Cigarette Market February, 1979, http://legacy.library.ucsf.edu/tid/oxg59d00.

[19]Federal Trade Commission, "Staff Report on Cigarette Advertising Investigation" (1981), ch. 3; D. Luke, E. Esmundo, and Y. Bloom, "Smoke Signs: Patterns of Tobacco

The tobacco industry's own internal evaluations confirmed the important role of advertising in building and sustaining demand for cigarettes. S. Clay Williams, head of the R.J. Reynolds testified under oath in Federal court that, "our attitude toward advertising in the cigarette business is that it is absolutely essential to use advertising to maintain, and certainly necessary to use it to extend, the volume of consumption of Camel Cigarettes."[20] A 1953 Brown and Williamson Tobacco Co. internal review of the previous forty years of cigarette advertising concluded that "the cigarette industry dramatically demonstrates the force of advertising in the United States today… the rise and fall of every brand of consequence has been … shown to be the direct result of consumer advertising."[21] A major National Institute of Cancer study concurs with internal tobacco industry findings on the powerful role of advertising and promotion of cigarettes with the use of cigarettes, concluding:

> The total weight of evidence—from multiple types of studies, conducted by investigators from different disciplines, and using data

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Billboard Advertising In A Metropolitan Region" Tobacco Control (2000 March; 9:1): 16–23.

[20]Testimony of S. Clay Williams, United States v The American Tobacco Company, Et. Al. Criminal No. 6670, The United States District Court for the Eastern District of Kentucky, (October 6, 1941), http://legacy.library.ucsf.edu/tid/lty15f00.

[21]"Copy of a Study of Cigarette Advertising Made by J .W. Burgard, 1953" Brown and Williamson Tobacco Co. http://legacy.library.ucsf.edu/tid/kmn99d00. See also, John Tindall, "Cigarette Market History and Interpretation and Consumer Research: MMTP Presentation" (February 13, 1992), http://legacy.library.ucsf.edu/tid/jrp20j00

> from many countries—demonstrates a causal relationship between tobacco advertising and promotion and increased tobacco use.[22]

CIGARETTE MANUFACTURERS PROMOTED, ADVERTISED, AND MARKETED THEIR PRODUCTS AS HARMLESS TO HEALTH

Cigarette manufacturers promoted cigarette smoking as a pleasurable activity harmless to health. When the American Tobacco Company successfully expanded its market among women in the late 1920s, it launched an advertising campaign touting cigarettes as a diet aid, suggesting that women should "reach for a Lucky instead of a sweet," a slogan American Tobacco president George Washington Hill claimed to have coined himself.[23] Later, Lucky Strike advertisements offered more explicit health claims. A 1930 advertisement stated that "toasting removes dangerous irritants that cause throat irritation and coughing."[24] The R.J. Reynolds Tobacco Company elicited testimonials from prominent athletes such as New York Yankee baseball player, Lou Gehrig stating that Camels "don't get your wind."[25] Another R.J. Reynolds's advertising campaign advised, "For Digestion's Sake Smoke Camels."[26] In the 1940s, Reynolds boasted that "More Doctors

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[22]National Cancer Institute, The Role of the Media in Promoting and Reducing Tobacco Use, pp. 11-12.

[23]The American Tobacco Company, "Sold American"—The First Fifty Years, 75.

[24]Full page Lucky Strike Advertisement in Colliers Magazine (December 11, 1930).

[25]Full page Camel advertisement in Newsweek (June 1, 1935).

[26]Full page Camel advertisement in LIFE Magazine (December 7, 1936).

Smoke Camels" in its advertisements.[27] Philip Morris declared that its customers were "Safer Smoking Philip Morris" and that the brand was "Scientifically proved less irritating for the nose and throat."[28]

CIGARETTE INDUSTRY MARKETING AND PUBLIC RELATIONS TARGETED THE MEDICAL PROFESSION TO SHAPE CONSUMER EXPECATIONS THAT CIGARETTES DID NOT CAUSE HEALTH HARMS

Cigarette manufacturers sought to shape the opinion of the medical profession by advertising health claims for their products in medical and scientific journals. A 1935 Philip Morris advertisement in the New Jersey state medical journal indicated to doctors that when smokers switched to Philip Morris cigarettes, "Every case of irritation of the nose and throat due to smoking cleared completely or definitely improved."[29] Philip Morris provided health research information to the medical profession, informing doctors in 1938 that the company's "research files contain exhaustive data from authoritative sources from which we will be glad to quote whatever may be upon your question."[30] The practice of marketing to the medical profession on health claims continued into the

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[27]Full Page Camel advertisement in The Trained Nurse and Hospital Review (April 1946).

[28]Philip Morris advertisement in LIFE Magazine (March 22, 1943).

[29]Philip Morris Advertisement, "What happened when smokers changed to Philip Morris?" The Journal of the Medical Society of New Jersey February 1, 1935.

[30]Philip Morris Advertisement, "Please ask us..." The Pennsylvania Medical Journal (November 1938).

1950s. A 1951 advertisement, citing various medical studies stated that "with proof so conclusive" doctors should consider it "good practice to suggest PHILIP MORRIS to your patients who smoke…"[31] Philip Morris also informed the general public that its products were safe, as in the advertisement that stated: "Your (sic) Safer Smoking Philip Morris" and that the brand was "Scientifically proved less irritating for the nose and throat." [32] R J. Reynolds listed full-page ads in forty-six medical journals, including The Lancet and The New England Journal of Medicine, advising physicians that "when suggesting a program to improve a patient's smoking hygiene, you may find it of value to recommend Camel."[33]

CIGARETTE MANUFACTURERS MARKETED TO YOUTH DESPITE CLAIMS TO THE CONTRARY

Representatives of the cigarette industry have frequently stated publicly in the media and in sworn testimony before the United States Congress that they do not market their products to youth.[34] Nonetheless, industry documents show that enticing children to

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[31]Philip Morris Advertisement, "Simple test proves instantly Philip Morris are less irritating," Hawaii Medical Journal (March 1, 1951).

[32]Philip Morris advertisement, LIFE Magazine (March 22, 1943).

[33]R. J. Reynolds Tobacco Co., [print advertisement in medical journals], "THE SLOWER-BURNING CIGARETTE MEANS LESS NICOTINE IN THE SMOKE!" (1942) R. J. Reynolds. Bates No. 502596793, http://legacy.library.ucsf.edu/tid/cpt78d00.

[34]See, by way of example, Tobacco Institute, "Cigarette Manufacturers Outline Position on Labeling, Advertising Proposals" (March 24, 1965), http://legacy.library.ucsf.edu/tid/vct76b00.

smoke has always been the foundation of the cigarette business. In the 1920s, the R.J. Reynolds Tobacco Company announced to its sales staff that "School days are here and that means BIG TOBACCO BUSINESS for somebody [emphasis in original]." RJR instructed its sales staff to visit prep schools and colleges and universities in their territory. Sales staff were instructed to give "every school a good working just as quick as possible," and to "line-up leaders and the most popular students" to help promote Reynolds's cigarettes.[35] The firm pursued similar policies in the 1940s and 1950s, hiring college students to serve as marketing agents, distributing free cigarettes and promotional materials. A 1948 R.J. Reynolds marketing memorandum instructed sales representatives to "visit the school and college campuses" in their sales territory to determine "how the various brands of cigarettes and smoking tobaccos sell among the students at each school and college." [36]

Tobacco advertising enticed children to smoke by featuring celebrities, well-known athletes, and cartoon characters that appealed to children. Sports stars and celebrities idolized by children, such as Lou Gehrig, Babe Ruth, Joe DiMaggio, Mickey Mantle and

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[35]R.J. Reynolds Tobacco Company, "School Days are Here" [sales memorandum] (September 9, 1927) http://legacy.library.ucsf.edu/tid/atc19d00.

[36] R.J. Reynolds Tobacco Company, "We Are Sending You Under Separate Cover a Supply Of Forms, Sample Of Which Is Attached" (January 5, 1949) https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/kmyd0083.

Roger Maris appeared frequently in tobacco advertisements touting the pleasures of smoking cigarettes.[37]

Cartoon characters comprised an important advertising technique that attracted youths to cigarettes. In the 1930s and 1940s, R.J. Reynolds promoted its Camel brand cigarette in "Comic Weekly," the Sunday comics insert that appeared nationwide in the newspapers of the Hearst newspaper chain. According to Heart's own market research, the "Comic Weekly," which included R.J. Reynolds's Camel Cigarette advertisements, reached an audience of five million homes, including children "from 3 to 21."[38] In the early 1930s, R.J. Reynolds also produced a comic-book guide to magic tricks, which it promoted through a comic strip advertisement campaign, "It's fun to be fooled."[39]

In the 1950s, the American Tobacco Company advertised its Lucky Strike brand with a comic strip featuring "Happy Joe Lucky" a diminutive, child-like character. The strip appeared in the daily and Sunday comics section of 203 leading U.S. newspapers,

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[37]"OLD GOLD Hits A 'Homer' For Babe Ruth Blindfold Cigarette Test" New York Times (July 9, 1928), p. 22; Lou Gehrig, "They Don't Get Your Wind [Camel Cigarettes]" Newsweek (June 1, 1935); An extensive online database of cigarette advertisements is maintained at "Not a Cough in a Carload: Stanford Research into the Impact of Tobacco Advertising," (Stanford University School of Medicine) http://tobacco.stanford.edu/tobacco_main/index.php.

[38]"The Comic Weekly" New York Times (July 7, 1934), p. 20; "The Comic Weekly" New York Times (January, 1, 1941), p. 40.

[39] Magician's Handy Book of Cigarette Tricks also Coin and Card Magic (R.J. Reynolds, 1933); "It's Fun to be Fooled [cartoon advertisement for Camel Cigarettes] 1933, http://171.67.24.121/tobacco_web/images/tobacco_ads/psy_exploits/fooled/large/fooled_14.jpg.

reaching a substantial population of children. In 1958, Philip Morris created its own comic strip character—an action-adventure character named Duke Handy. Philip Morris placed multi-panel comic strip advertisements in the color comics section of newspapers nationwide. The company boasted that "the Philip Morris sales message [is] woven right into the action!"[40]

"Johnny Philip Morris" the company's diminutive product spokesman, appealed to children. Johnny Roventini—who originated the character--and any of the "Johnny Jr.'s" each stood about four feet tall and would tour the nation in a bellhop uniform bellowing the catchphrase, "Call for Philip Morris." The character appeared on radio and later, television advertising and represented the company's cigarettes in all manner of print, outdoor, and point-of-sale media. Gus Wayne, one of the "Johnny Jr." stand-ins who traveled the country promoting Philip Morris cigarettes noted the strong attraction the character held among children:

> "In my travels, I've noticed that "Johnny" is more readily recognized by the children that the adults. Children being very impressionable remembering things they see and hear, long after they've occurred. Here now, I further feel, based upon my observations, that the Philip Morris trade mark (sic), "Johnny" has fallen into the same category as Hop-a-long Cassidy, Howdy-Doody, etc.[41]

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[40]"Here's an exciting new idea in advertising [Duke Handy]" Philip Morris http://legacy.library.ucsf.edu/tid/hpw13e00.

[41] Gus Wayne to J.E. Gallagher, "Sales Promotion" (December 6, 1953), http://legacy.library.ucsf.edu/tid/smk78e00.

Philip Morris capitalized upon its spokesmen's appeal to children by holding local events where children appeared alongside the distribution of cigarettes as illustrated in the photographs reproduced in Figures 5-6 reproduced in Appendix I.

Cigarette manufacturers also turned to animated cartoons to attract youth to its products. In 1960, R.J. Reynolds sponsored the inaugural season of the evening cartoon comedy, "The Flintstones." Although billed as a show for adults, "The Flintstones" aired during the prime-time broadcast hours on Friday evenings and attracted a significant youth viewership.

CIGARETTE MANUFACTURERS ENGAGED IN SAMPLING TO PROMOTE SMOKING

Distributing free cigarettes—called sampling in the industry parlance—was an important technique for recruiting underage smokers and promoting smoking, generally. R.J. Reynolds directed its sales representatives to make sure these giveaways were spurring cigarette sales to students in their sales territories by "evaluat[ing] the effectiveness of the extensive sampling that has been done in schools and colleges over the country during the past few months."[42]

Manufacturers would promote the distribution of free samples of cigarettes at places and events where young people would congregate, A 1950 R.J. Reynolds sales

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[42]R.J. Reynolds Tobacco Co., "We Are Sending You Under Separate Cover A Supply Of Forms, Sample Of Which Is Attached" (May 20, 1948), http://legacy.library.ucsf.edu/tid/qrc19d00.

memo directed sales staff that "good place to sample young smokers is in coffee shops, drug stores and restaurants in office buildings where they assemble for the 'kaffe klatch' around ten o'clock in the mornings."[43] The American Tobacco Co. operated an extensive college marketing program that enlisted student representatives, who were directed to "sample student consumers on and adjacent to the campus."[44]

Lorillard responded to the release of the 1964 Surgeon General's Report on Smoking and Health by launching a massive national sampling campaign, giving away 3,329,000 four packs of Kent and Newport cigarettes after the report's release.[45] In 1974, Lorillard reported to the Federal Trade Commission that it has distributed 24,158,683 free sample four packs across the nation. A 1979 Lorillard marketing plan for its flagship Newport cigarette proposed:

> Advertising will be concentrated on young adult smokers. Promotion will be targeted to the same group with an emphasis on sampling and continuity events to build trial/awareness.[46]

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[43] R. J. Reynolds. "Sampling." (May 23, 1950) https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/rmyd0083.

[44] American Tobacco Co. Circular Book, September 1, 1957 - October 31, 1957. 1957 September 01. American Tobacco. https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/nmnn0174

[45] W.L. Sullivan, "4S PACKAGES - KENT KING SIZE, NEWPORT KING SIZE," Lorillard Records, Truth Tobacco Industry Documents, https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=ntmm0077.

[46] R.W. Davis, "Newport 1979 Brand Plan," 1978, Lorillard Records, Truth Tobacco Industry Documents, https://www.industrydocuments.ucsf.edu/docs/#id=fpdb0116.

Lorillard maintained a special fleet of vehicles known as the "Vantastic Sampling Vans." Colorfully emblazoned with the Newport logo and artwork, these vans would ply urban neighborhoods, distributing free cigarettes, including the neighborhoods of New York. Lorillard sales executives communicated to their sales staff the purpose of these vans through a short poem:

> "When your target group is hard to reach
> With a standard marketing plan,
> Get out and sample them on the streets
> With the 'Vantasic Newport Sampler Van'[47]

The evidence shows that Lorillard sales representatives distributed samples to children and deviated from formally stated sampling polices. For example, in 1963 a Lorillard sales representative distributed free cigarettes to junior high students attending an anti-smoking education event at Arkansas State University. The representative handed out the free cigarettes to "young teenagers" as they passed through the cafeteria line picking up their lunch. He only ceased when reprimanded by an adult chaperone. [48] In 1989, an RJR executive observed Lorillard representatives "conducting irresponsible sampling

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[47] V. Lindsley, "Subject: Newport Van Sampling: The Vantastic Van Is Coming" (May 16, 1983), Lorillard Records, Truth Tobacco Industry Documents, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=qhhc0066.

[48] L.W. Vaught, "[Re: Sampling Junior High School Students]," March 25, 1963, R.J. Reynolds Records, Truth Tobacco Industry Documents, https://www.industrydocuments.ucsf.edu/docs/#id=srgj0045.

practices which negatively impact the Industry's image," causing RJR to lose its "sampling privileges at an Hispanic event" and prompting RJR's corporate counsel to lodge a complaint with the corporate counsel of Lorillard.[49] At the same time, RJR representatives observed Lorillard staff distributing free Newport cigarettes in Cleveland in disregard for industry-wide formal policies. In Chicago, Lorillard representatives were handing out Newport cigarettes from the window of the sampling van without any sign indicating that samples were only for those 21 years or older, all of this was in direct violation of Lorillard's formal, although clearly unenforced policies.[50]

While Lorillard's stated sampling guidelines prohibited the distribution of free cigarettes to those under the age of twenty-one, its method of verification did not rely on any objective verification of age. For example, Federal Distributing, a firm Lorillard contracted with to distribute samples of Newport and Newport lights, instructed its staff to not give free samples to "anyone who appears to be under twenty-one years of age. You

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[49] M.L. Suggs, "Newport Sampling," R.J. Reynolds Records, Truth Tobacco Industry Documents, accessed June 12, 2019, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=jkjg0059.

[50] D.N. Iauco, "Newport Sampling," November 22, 1989, R.J. Reynolds Records, Truth Tobacco Industry Documents, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=nggw0093; Wayne W. Juchatz, "Newport Sampling," December 8, 1989, R.J. Reynolds Records, Truth Tobacco Industry Documents, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=hrgb0081.

are the judge!!" These sampling guidelines did not require any identification to confirm the age of the recipient of free cigarettes.[51]

Sampling cigarettes to young people continued into the 1980s by all cigarette firms. ABC News documented numerous instances of industry representatives distributing free samples of cigarettes to children at sporting events and other public venues where children would gather.[52]

CIGARETTE MANUFACTURERS CONDUCTED MARKET RESEARCH ON YOUTHS TO PROMOTE UNDERAGE SMOKING

Cigarette manufacturers employed sophisticated research techniques to carefully study the smoking habits of children to better shape their youth smoking marketing efforts. Industry officials understood that the vast preponderance of smoking initiation occurred among youths under the age of eighteen. In 1953, George Weissman, a Philip Morris marking official who would eventually rise to head the company, concluded from a marketing report that his company's sales position was strong because "we have our greatest [sales] strength in the 15-24 age group."[53] Reviewing a 1959 marketing study, a

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[51] "Norman D. Einzinger, Executive Vice President, Federal Distributing Co. to Paul Lawless, Sales Promotions Director, Lorillard Tobacco Co.," January 24, 1978, Lorillard Records, Truth Tobacco Industry Documents, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=ggfk0077.

[52] ABC News, 20/20 Telecast, "Growing Up In Smoke [broadcast transcript], "October 20, 1983). https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/fsmd0143.

[53]George Weissman, "Memo [to RN DuPuis]," (October 7, 1953) http://legacy.library.ucsf.edu/tid/taf18e00.

Philip Morris marketing official indicated that the company should "win more young non-smokers."[54] Another Philip Morris marketing research report, "Young Smokers: Prevalence, Trends, Implications, and Related Demographic Trends," concluded that "today's teenager is tomorrow's potential regular customer." For Philip Morris to prosper as a company, it was critical for the firm to attract these underage smokers because "it is during the teenage years that the initial brand choice is made."[55]

R.J. Reynolds also worked hard to improve its share of the under-eighteen, youth market through market research. A 1971 R.J. Reynolds memorandum broke down each manufacturer's market share by age groups that included the 14-17-year-old cohort. The report attributes the success of competitor Philip Morris to its "substantially higher share among smokers under 35," an age cohort whose lower bounds were fourteen.[56] R.J. Reynolds continued marketing research youth smoking well into the 1980s. A 1984 study indicated that 31 percent of smokers began smoking after age eighteen. Consequently, 69 percent began smoking at age eighteen or less. These under-aged smokers—described as

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[54]Danker, W. H. "Roper Attitude Study" (May 28, 1959) http://legacy.library.ucsf.edu/tid/rnl38e00.

[55]Myron Johnson, "Young Smokers: Prevalence, Trends, Implications, and Related Demographic Trends," (March 31, 1981), http://legacy.library.ucsf.edu/tid/ftu74e00. Johnson offered a similar analysis six year earlier in "The Decline in the Rate of Growth of Marlboro Red" (May 21, 1975), http://legacy.library.ucsf.edu/tid/hvh57h00.

[56]J.H. Sherrill, "Company Shares Broken By Age Groups," (September 21, 1972) http://legacy.library.ucsf.edu/tid/zvg19d00. See also, Frank G. Colby, "Cigarette Concept to Assure RJR a Larger Segment of the Youth Market," (December 4, 1973) http://legacy.library.ucsf.edu/tid/exp20j00.

"younger adult smokers"—were the "only source of replacement smokers," a population the report concluded was crucial to the future of the firm's business.[57] The future of R.J. Reynolds depended upon recruiting children to smoke the company's cigarettes. A confidential internal report laid out the issue: Realistically, if our Company is to survive and prosper, over the long term, we must get our share of the youth market.[58]

The role of youth smoking in sustaining and growing the cigarette business was widely known among tobacco manufacturers. A Lorillard Tobacco Company official summarized the entire tobacco industry's approach to youth smoking when he wrote, "the base of our business is the high school student."[59]

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[57]Diane S. Burrows, "Strategic Research Report: Younger Adult Smokers: Strategies and Opportunities," Winston Salem, N.C: Marketing Development Department, R.J. Reynolds, February 29, 1984. Bates No. 501431517/1610. http://legacy.library.ucsf.edu/tid/ftc49d00. See also Roper Organization Inc., "A Study of Smoking Habits among Young Smokers, Prepared For Philip Morris, Inc.," Volume I: Discussion (typescript, July 1974), Bates: 1002646151-6185, http://legacy.library.ucsf.edu/tid/wlv74e00w.

[58]Claude Teague, "Research Planning Memorandum on Some Thoughts About New Brands of Cigarettes For The Youth Market," R.J. Reynolds (1973).

[59]T. L. Achey to Curtis Judge, "Product Information," Memo, August 30, 1978,: http://legacy.library.ucsf.edu/tid/yhg56b00.

CIGARETTE MANUFACTURERS TARGETED URBAN, MINORITY AND LOW-INCOME POPULATIONS WITH OUTDOOR AND POINT OF SALE ADVERTISING.

Cigarette manufacturers employed outdoor and point of purchase advertising to reach urban and low-income populations. By 1980, nearly half of all billboards in the United States advertised cigarettes, many targeting urban, inner-city and minority populations. A marketing report prepared for R.J. Reynolds, for example, concluded that black consumers were "less educated and more likely to be among the large segment of functionally illiterate; hence their readership and purchase of magazines and newspapers are low." To target these consumers, heavy investments in outdoor, out-of-home advertising were recommended.[60] These outdoor and point of purchase advertising promotions also reached children under the age of 18 as they moved through public spaces in their neighborhoods and shopped at local markets.

In 1974, a Brown and Williamson sales executive commented on the effectiveness of competitor R.J. Reynold's extensive billboard advertising, noting that "You do not have to work hard with the Winston board – you simply look up and read it. It 'pops'."[61]

An investigation in Bostonby public health researchers in the 1990s confirmed that outdoor cigarette advertising was pervasive in inner-city neighborhoods.

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[60] The Black Menthol Cigarette Market February, 1979, http://legacy.library.ucsf.edu/tid/oxg59d00.

[61] L. L. Mudd, "Subject: Boston Market Evaluation," May 30, 1974, Brown and Williamson Records, Truth Tobacco Industry Documents, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=zkbp0139.

Specifically, the investigators concluded that "exposure [to outdoor tobacco advertising] is intense in areas close to public schools, and more intense in neighborhoods with more children, with significant Black and Hispanic/Latino populations, and with low socioeconomic status."[62]

Cigarette manufacturers also invested heavily in point of sale advertising, marketing and promotion. Like billboards and other forms of outdoor advertising, point of purchase displays and promotions reached large numbers of young people, especially those living in inner city neighborhoods.[63]

CIGARETTE MANUFACTURERS TARGETED BEGINNING SMOKERS, UNDERAGE SMOKERS, AFRICAN AMERICANS, AND OTHER SUB-POPULATIONS WITH MENTHOL CIGARETTES

Cigarette manufacturers targeted African Americans and young, underage, "starter" smokers with menthol products. R.J. Reynolds, Lorillard, and Philip Morris each understood that black smokers perceived menthol cigarettes to be healthier products, even as brands such as Kool offered some of the highest nicotine levels of any cigarette in their

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[62] Linda G Pucci, Herbert M Joseph, and Michael Siegel, "Outdoor Tobacco Advertising in Six Boston Neighborhoods: Evaluating Youth Exposure," American Journal of Preventive Medicine 15, no. 2 (August 1, 1998): 155–59, https://doi.org/10.1016/S0749-3797(98)00034-8.

[63] Lisa Henriksen et al., "A Longitudinal Study of Exposure to Retail Cigarette Advertising and Smoking Initiation," Pediatrics 126, no. 2 (August 2010): 232–38, https://doi.org/10.1542/peds.2009-3021 Lindsay Robertson et al., "A Systematic Review on the Impact of Point-of-Sale Tobacco Promotion on Smoking," Nicotine & Tobacco Research 17, no. 1 (January 2015): 2–17, https://doi.org/10.1093/ntr/ntu168.

class.[64] A report prepared for R.J. Reynolds summarized the research on African-American smoker's views on the healthfulness of menthols:

> There is a feeling that mentholated cigarettes are more soothing on the throat, less harsh. The mentholated cigarette, whether a brand, viewed as quite strong such as Kools or relatively weak, is almost invariably regarded as milder than other types, easier on the throat and thus less harmful generally.[65]

Similarly, a study conducted for Philip Morris found that black smokers believed that menthol cigarettes were "better for one's health."[66]

Cigarette manufacturers preyed upon the public's belief that menthol cigarettes were healthier than non-mentholated products through their marketing. The Brown and Williamson Tobacco Co. (acquired by R.J. Reynolds in 2005) devised marketing plans with the goal of providing smokers the "health reassurance that will be necessary for

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[64] All Udow, "The Chemistry of Kool and a Recommendation" (May 24, 1975). http://legacy.library.ucsf.edu/tid/fds74e00/pdf. See also, Market Facts, Inc. "Black Smoker Characteristics Study 1978-75." (October 1978), http://legacy.library.ucsf.edu/tid/otf14f00.

[65] Callahan Research Associates, "A Summary of Focus Group Research among Young Black People on Mentholated Cigarettes," (February, 1972) http://legacy.library.ucsf.edu/tid/pkt66a00/pdf.

[66] Tibor Koeves Associates. "A Pilot Look at the Attitudes of Negro Smokers Toward Menthol Cigarettes," (September 1968). http://legacy.library.ucsf.edu/tid/tdp54e00/pdf.

[market] growth" especially among increasing its business among blacks and Hispanics.[67]

Attracting new, underage smokers with menthol products constituted an important means by which the tobacco manufacturers recruited "replacement smokers." Brown and Williamson sought to reach more "starters" with its Kool brand. A 1973 Kool marketing plan emphasized the importance of "KOOL's stake in the 16 - 25-year-old population segment" and indicated that "all magazines will be reviewed to see how efficiently they reach this group."[68]

BEFORE 1950, THERE WAS LITTLE PUBLIC KNOWLEDGE THAT CIGARETTES CAUSED DEADLY DISEASES

There existed very little knowledge and understanding among the public that cigarettes caused deadly disease before 1950. Health education in the schools during the period 1920-1960 minimized or ignored the risks of cigarette smoking**.** For example, in 1926 the National Education Association and American Medical Association's "Joint Committee on Health Problems in Education"—designed to offer national standards for health education—offered only the weakest guidelines on tobacco education,

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[67] "Kool Family Utopian Objectives," (August 1978), http://legacy.library.ucsf.edu/tid/vnh40f00. See also, U.S. Department of Health and Human Services. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General (Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2012).

[68]R.L. Johnson, "re: List of conclusions based on Wave XIII" (February 21, 1973), http://beta.industrydocuments.library.ucsf.edu/tobacco/docs/tzfd0040.

recommending that teachers instruct their students on the "advantages of abstinence from smoking until at least 21 years of age."[69] The 1953 edition of the same volume described only minimal effects of smoking and advised the prospective health instructor that "it is a disservice to exaggerate the harmful effects of tobacco because the visible evidence belies the charge. The child sees adults-including doctors—smoke with evident enjoyment."[70] Howard S. Diehl's Textbook of Healthful Living, widely used in schools in the 1940s and 1950s, and beyond, presented a decidedly ambiguous treatment of the effect of tobacco use on health. After reviewing evidence for and against the accusation that tobacco smoking may or may not impair mental efficiency, may or may not result in fatigue or stimulation, may aid or impair digestion, may harm the heart, may or may not harm unborn children, he offers the student the following conclusion: "In spite of all the careful studies and observations of the effects of tobacco upon man and animals we are still unable to give a final answer to the ultimate effects of moderate smoking upon health." Significantly, Diehl makes no mention of lung cancer whatsoever.[71] Another widely used health textbook discussed tobacco in a chapter titled "preventing nervousness." It

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[69]Thomas D. Wood Chairman, Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, Health Education: A Program for Public School and Teacher Training Institutions (New York: 1926), 146-47.

[70]Charles C. Wilson, ed., Health Education: A Guide for Teachers and a Text for Teacher Education (New York: Joint Committee on Health Problems in Education, 1953), 60

[71]Harold S. Diehl, Textbook of Healthful Living Fourth Edition (New York: McGraw-Hill Book Co., 1950), 185-196; quotation is on p. 194. Diehl had a distinguished career in public health as a medical doctor, professor of preventive medicine and dean of medical sciences at the University of Minnesota.

described cigarette smoke as "comparatively safe" and indicated that the inhaling the smoke might produce "cigarette cough." The author's recommendation was not to inhale.[72]

Other educational and classroom activities reinforced the social legitimacy of smoking, thus undermining any messages that cigarettes were deadly. For example, it has been common practice in elementary school classrooms to instruct students in how to make ashtrays, a practice reflected in craft and teacher-training textbooks. One book on crafts for young people offered instructions for making a cigar ashtray by gluing cigar bands to a glass tray. The author suggested making a pen tray for those "who do not want to encourage smoking."[73] As late as 1959 a widely used textbook for training kindergarten teachers suggested ashtrays as acceptable craft ideas for classroom projects.[74] Such projects reinforced the notion that smoking was a normal and acceptable activity.

Films also reflected the social practice of smoking, offering a historical illustration of how little the public believed cigarettes to be the cause of life-threatening conditions such as cancer or heart and lung disease. Female movie stars such as Marlene Dietrich, Lauren Bacall, and Bette Davis made smoking central to their film personas. Male movie

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[72]Dean Franklin Smiley and Adrian Gordan Gould, Your Health (New York: The Macmillan Co., 1951), 175-176.

[73]Bertha Johnson, Home Occupations for Boys and Girls (Philadelphia: George W. Jacobs & Co., 1908), 67

[74]Josephine C. Headley and Neith Foster, Foster and Headley's Education in the Kindergarten. (3rd Ed. New York: American Book Co., 1959), 144

stars such as Humphrey Bogart, John Wayne, Montgomery Clift and Frank Sinatra did likewise. Cigarettes were used to symbolically consummate relationships, as when Paul Henreid simultaneously lights two cigarettes in his mouth, before offering one to Bette Davis in the film Now, Voyager (1942). In Thirty Seconds Over Tokyo (1944), American airmen recover from injuries by joyfully smoking cigarettes in their hospital beds. In The Wings of Eagles (1957), John Wayne's film biography of Navy airman turned movie screenwriter, Frank W. "Spig" Wead, Wayne smokes in the hospital while recovering from a devastating spinal cord injury. Unable to use his hands, the nurse holds the cigarette in his mouth. His doctor examines him, cigarette in hand.

THE MODERN CIGARETTE-HEALTH CONTROVERSY BEGAN IN 1950

The modern cigarette health controversy started in the early 1950s with the growing publicity of new scientific research indicating that cigarette smoking may cause lung cancer. Articles in national magazines such as The Reader's Digest and LIFE, as well as leading newspapers, and broadcast media publicized the growing body of scientific research implicating cigarette smoking with disease. Those reports, however, could be highly qualified and confusing to the public. The Reader's Digest, in entertaining the question "How harmful are Cigarettes?" described "benzo-pyrene"—a suspected carcinogen in tobacco smoke—as merely "an irritant rather than a poison."[75] Other news stories flatly denied the connection between cigarettes and cancer, as in a 1955 Newsweek story

[75]Roger William Riis, "How Harmful Are Cigarettes?" The Reader's Digest (January, 1950), 3.

that stated "no link between cigarette smoking and lung cancer has been found" in a two-year-long British study. The story goes on to list "ways to fend off cancer." No mention of foreswearing cigarette smoking or tobacco use is mentioned.[76]

The media coverage of smoking and health presented conflicting information that led to high levels of confusion among the public, particularly in the 1950s. For example, in 1954 The Reader's Digest reported that ''medically speaking, tobacco is not habit-forming''. Smoking is merely ''habit-forming in the same way that three meals a day or eight hours sleep or wearing clothes are habit-forming''. Cessation of use merely makes the user ''uncomfortable''.[77] Other news stories flatly denied the connection between cigarettes and cancer, as in a 1955 Newsweek story that stated ''no link between cigarette smoking and lung cancer has been found'' in a two-year-long British study. The story goes on to list ''ways to fend off cancer''. No mention of foreswearing cigarette smoking or tobacco use is mentioned. Industry denials and obfuscations were standard elements in smoking and health stories.

CIGARETTE MANUFACTURER'S INTERNALLY ACKNOWLEDGED THAT SMOKING CAUSED DISEASE WHILE CONCEALING THAT KNOWLEDGE FROM THE PUBLIC

While tobacco industry officials never wavered from their public position that cigarette smoking had not been shown to be the cause of any disease, internally, there

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[76]"Medicine—Special Report" Newsweek (July 25, 1955), 62-63.

[77] Herbert Brean, "How to Stop Smoking," The Reader's Digest (April, 1954):31

was a widespread acknowledgment that smoking was a deadly health hazard. In 1953, R.J. Reynolds chemist, Claude Teague, undertook an assessment of science on smoking and health in a report titled, "Survey of Cancer Research with Emphasis on Possible Carcinogens from Tobacco." Reviewing published technical and scientific research that stretched back as early as 1900 Teague concluded that the science indicated a relationship between smoking and lung cancer, writing that "Studies of clinical data tend to confirm the relationship between heavy and prolonged tobacco smoking and incidence of cancer of the lung."[78]

Having established that the science indicated a link between cigarette use and lung cancer, R.J. Reynolds scientists initiated specific investigations of the company's products. A 1956 investigation by Alan Rodgman analyzed the smoke of the firm's popular Camel brand. Rodgman introduced his report by stating unambiguously that the published science pointed to cigarette use as a cause in the rise of lung cancer:

> Statistical analyses based on retrospective . . . and prospective . . . clinical studies indicate that tobacco smoke, and in particular, cigarette smoke, is a major causative factor in the present high and increasing incidence of cancer of the respiratory system in humans."[79]

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[78]Claude Teague, "Survey of Cancer Research with Emphasis Upon Possible Carcinogens from Tobacco" (February 2, 1953), 14, http://legacy.library.ucsf.edu/tid/jad76b00

[79]Alan Rodgman, "The Analysis of Cigarette Smoke Condensate. I. the Isolation and/or Identification of Polycyclic Aromatic Hydrocarbons in Camel Cigarette Smoke Condensate" (September 28, 1956), R.J. Reynolds. http://legacy.library.ucsf.edu/tid/txv35d00, p.

Rodgman's report probes further, identifying polycyclic aromatic hydrocarbons, a constituent of cigarette smoke, as the class of compounds responsible for disease. He concludes his report by stating that this class of compounds should be removed from cigarette smoke:

> Since it is now well established that cigarette smoke does contain several polycyclic aromatic hydrocarbons and considering the potential and actual carcinogenic activity of a number of these compounds, a method of either complete removal or almost complete removal of these compounds from cigarette smoke is required.[80]

Rodgman continued submitting research reports to R.J Reynold's management indicating that cigarette use was a cause of lung cancer. In 1962 he wrote that the evidence linking cigarettes to serious disease was "overwhelming:"

> Obviously, the amount of evidence accumulated to indict cigarette smoke as a health hazard is overwhelming. The evidence challenging this indictment is scant.[81]

Management at the Liggett & Myers Tobacco Co. was in possession of the same information—that cigarette use caused deadly diseases such as lung cancer. The Arthur

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5. Note: the elided material consists only of a series of numerals enclosed in parentheses indicating relevant citations in the report's bibliography.

[80] Rodgman, "Analysis of Cigarette Smoke Condensate," p. 37.

[81] Alan Rodgman, "The smoking and health problem--a critical and objective appraisal" (1962) 1504822847/2852 R.J. Reynolds, http://legacy.library.ucsf.edu/tid/zhm55d00.

D. Little organization, a contract research firm that performed research work for Liggett, reported to Liggett that tobacco contained "biologically active materials" that were "cancer causing", "cancer-promoting", and "poisonous."[82]

Philip Morris also knew and accepted the science linking cigarettes to disease. The company publicly claimed that it had been researching the connections between smoking and lung cancer since the 1930s:

> Since 1932, we at Philip Morris have engaged in extensive research. We have found no evidence that there is any correlation between cigarette smoking and the publicized increase in lung cancer.[83]

While stating to the public that cigarettes were not the cause of any disease, internally, Philip Morris scientists and managers clearly understood that cigarette use caused serious disease. Dr. Helmut Wakeham oversaw the firm's research and development efforts, eventually rising to the position of Vice-President of Research and Development. In 1961 Wakeham made a presentation to Philip Morris's Research and Development Committee in the firm's corporate office in New York City where he informed the committee that "carcinogens are found in practically every class of compounds in smoke." He identified forty compounds present in cigarette smoke in what he described merely as a "partial list" of carcinogens. Wakeham explained that carcinogenic compounds in cigarette

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[82] A.D. Little, Inc., "L & M - A Perspective Review" (March 15, 1961), https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/yyld0111.

[83]Letter, James C. Bowling [Philip Morris] to Charles E. Swann [Radio WHSY/American Broadcasting Co.] (January 19, 1954), http://legacy.library.ucsf.edu/tid/mgg68e00.

smoke were so pervasive in levels that impacted health that removing them was not technically possible. "The best we can hope for is to reduce a particularly bad class, i.e., the polynuclear -hydrocarbons, or phenols," he concluded.[84] In reviewing the findings of the 1964 Surgeon General's report, Smoking and Health, which formally implicated cigarettes as a cause of premature death, lung cancer, emphysema, and coronary heart disease,[85] Wakeham indicated that the report's conclusions were sound. Writing in an internal company policy memo, he concluded that "A careful review of the report has so far disclosed no vitiating errors of commission."[86] Despite these internal conclusions, Philip Morris representatives, including Helmut Wakeham himself, publicly denied that cigarettes posed any health hazard.[87]

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[84]Helmut Wakeham, "Tobacco and Health R&D Approach Presentation to R&D Committee," Philip Morris (November 15, 1961), http://legacy.library.ucsf.edu/tid/xoa92i00, pp. 5, 9, 17.

[85]Surgeon General's Advisory Committee on Smoking and Health, and U.S. Public Health Service, Office of the Surgeon General. Smoking and Health. (Washington: Government Printing Office, 1964). The Office of the Surgeon General has issued a fifty year update of the original report, The Health Consequences Of Smoking – 50 Years Of Progress: A Report Of The Surgeon General (Atlanta, GA.: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014).

[86]Helmut Wakeham, Smoking and Health Significance of The Report of The Surgeon General's Committee to Philip Morris Incorporated: Evaluation Report (February 18, 1964), http://legacy.library.ucsf.edu/tid/pai57h00.

[87]Wakeham would later compare smoking to eating applesauce. See "The Marlboro Story - Death in the West [transcript]," (September 9, 1976), http://legacy.library.ucsf.edu/tid/hyk49e00.

Thus, by the late 1950s, tobacco industry scientists overwhelmingly believed that cigarettes were the principal cause of lung cancer. In the spring of 1958, a trio of scientists with the British American Tobacco Company travelled from Great Britain to the United States, visiting scientists and officials at or affiliated with the major cigarette manufacturers, as well as at universities, government and private research institutes to learn the views held by tobacco industry scientists on smoking and cancer. In particular, they visited scientists at Philip Morris, the American Tobacco Company, and Liggett and Myers. They also visited industry-affiliated scientists at the Tobacco Industry Research Committee in their New York and Richmond, Virginia offices. Finally, they met with industry-affiliated scientists at the Medical College of Virginia, also in Richmond. Having discussed the science of smoking and health in their meetings, the three British American Tobacco Company scientists reported that "the individuals whom we met believed that smoking causes lung cancer if by 'causation' we mean any chain of events which leads finally to lung cancer and which involves smoking as an indispensable link." A consensus had emerged within the tobacco industry that cigarette smoking was causative of lung cancer—a consensus that was concealed from the public.[88]

CIGARETTE-DELIVERED NICOTINE CAUSES ADDICTION IN SMOKERS

In 1988, the U.S. Surgeon General released a report concluding that "cigarettes and other forms of tobacco are addicting" and that "nicotine is the drug in tobacco that

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[88] H.R. Bentley, D.G.I. Felton, and W.W. Reid, "Report on Visit to USA and Canada (April 17, 1958 to May 12, 1958)," http://legacy.library.ucsf.edu/tid/ejz82i00.

causes addiction." The report further concluded that the "pharmacologic and behavioral processes" in tobacco addiction "are similar to those that determine addiction to drugs such as heroin and cocaine." Among the criteria employed by the Surgeon General were "compulsive use" and "psychoactive effects."[89] Subsequent studies have confirmed these findings.[90]

The biological basis of compulsive, daily use of cigarettes is driven by the smoker's need to avoid the symptoms of nicotine withdrawal: "irritability, depressed mood, restlessness, and anxiety." Nicotine is carried into the lungs as the smoker inhales the cigarette. Within seconds the nicotine is absorbed by the bloodstream and carried to the brain where it acts as an addicting drug.

Nicotine's biological activity in the brain is reinforced by conditioned behavioral and social factors—"cues" associated with the reduction of the symptoms of nicotine withdrawal that are perceived as pleasurable by the smoker. Such behavioral cues include rituals associated with manipulation of cigarette packaging and the cigarette itself, smoking after meals, or with coffee, or in social situations with other smokers. These

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[89] U. S. Department of Health and Human Services, Centers for Disease Control. The Health Consequences of Smoking: Nicotine Addiction. A Report of the Surgeon General (Washington, DC: U.S. Department of Health and Human Services, 1988), p. 7-9.

[90] Neal L. Benowitz, "Nicotine Addiction," The New England Journal of Medicine 362, no. 24 (June 17, 2010): 2295–2303, https://doi.org/10.1056/NEJMra0809890; U.S. Department of Health and Human Services. The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. Printed with corrections, January 2014

behavioral reinforcers work to maintain nicotine addiction and the practice of cigarette smoking. Social reinforcers play a significant role in the initiation of smoking among youths and in subpopulations where smoke in more prevalent such as low social economic status groups.[91]

The power and intensity of nicotine addiction in daily smokers is indicated by the low rates of successful quitting. Numerous studies by researchers in public health and the tobacco industry have found that most long-term smokers—up to 70 percent—want to quit smoking. The vast preponderance of these attempts fail: 80 percent of smokers who attempt quitting return to smoking within a month. The six-month quit rate ranges between 5.1 to 8.5 percent. The twelve-month success rate stands at meager 3 percent.[92]

CIGARETTE MANUFACTURERS KNEW CIGARETTE-DELIVERED NICOTINE CAUSED ADDICTION AND DESIGNED THEIR PRODUCTS TO ENHANCE NICOTINE'S IMPACT ON SMOKERS

The addictive qualities of nicotine which drove customers to compulsive use were well known to tobacco industry officials and were discussed in secret internal

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[91] Benowitz, "Nicotine Addiction." See also, Lynn Kozlowski, Jack E. Henningfield, Janet Brigham, Cigarettes, Nicotine, & Health: A Biobehavioral Approach (Thousand Oaks, Calf.: Sage Publications, 2001); B. Poland et al., "The Social Context of Smoking: The next Frontier in Tobacco Control?," Tobacco Control; London 15, no. 1 (February 2006): 59, http://dx.doi.org/10.1136/tc.2004.009886.

[92] Karen Messer et al., "Smoking Cessation Rates in the United States: A Comparison of Young Adult and Older Smokers," American Journal of Public Health 98, no. 2 (February 2008): 317–22, https://doi.org/10.2105/AJPH.2007.112060; Benowitz, "Nicotine Addiction."

memoranda, even as representatives of the tobacco industry denied that cigarette- delivered nicotine caused addiction. For example, one of the cigarette manufacturers "Research Directors" stated in a secret meeting in 1953, "It is fortunate for us that cigarettes are a habit they can't break."[93] Furthermore, industry officials implemented cigarette design changes to enhance the impact or "kick" of nicotine on the smoker with the goal of increasing cigarette sales.

In 1963, Addison Yeaman, general counsel to the Brown & Williamson Tobacco Co. explained the essential nature of the cigarette business: "we, then, are in the business of selling nicotine, an addictive drug."[94] Similar views reigned at other manufacturers. Claude Teague, a scientist at R.J. Reynolds, noted in a confidential report that the company's product was not tobacco, but nicotine, which he described as "a potent drug" and a "habit forming alkaloid." A cigarette is "a vehicle for delivery of nicotine," Teague noted. Nicotine addiction is what motivates smokers to continue smoking: "Happily for the tobacco industry, nicotine is both habituating-and unique in its variety of physiological actions." This drug, ultimately, was the basis of the cigarette manufacturers business. Teague explained that "the tobacco industry may be thought of as being a specialized, highly ritualized and stylized segment of the pharmaceutical industry." The addicting and habituating properties of nicotine are "unknown and/or largely unexplained to the non-

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[93] Hill & Knowlton, Forwarding Memorandum, December, 1953, John Hill Papers, Wisconsin Historical Society.

[94] Addison Yeaman, "Implications of Battelle Hippo I & II and The Griffith Filter," (July 17, 1963), University of California-San Francisco Brown & Williamson Collection, http://legacy.library.ucsf.edu/tid/xrc72d00, 4.

smoker." Without nicotine, there would be no cigarette business: If we "move toward reduction or elimination of nicotine from our products, then we shall eventually liquidate our business."[95]

At Philip Morris, similar acknowledgments of nicotine as an addictive drug prevailed, as well. In a 1959 Philip Morris study, company scientist, Dr. J.W. Geiger probed the question: "why do people smoke?" His findings included "addiction."[96] In the 1970s, senior scientist, Dr. William L. Dunn, Jr. encouraged company executives to "think of the cigarette pack as a storage container for a day's supply of nicotine."

In the 1980s and 1990s, R.J. Reynolds documents confirm widespread knowledge within the company of the role of nicotine in compelling smokers to keep on smoking. A 1982 memorandum discussing a study of attitudes towards smoking commented that while most long-term smokers "would like to stop," most are unable to do so. A 1992 R.J. Reynolds flatly declared "We are basically in the nicotine business."[97]

Cigarette manufacturers concealed their knowledge and research on the addictiveness of nicotine from government researchers and public health authorities, depriving

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[95]Claude Teague, "Research Planning Memorandum On the Nature of the Tobacco Business and the Crucial Role of Nicotine Therein," (April 14, 1972), http://legacy.library.ucsf.edu/tid/brr59d00.

[96] J. W. Geiger, "Psychological Research," (August 26, 1959), Philip Morris Records. https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/phhp0124.

[97]Claude Teague to Dr. G.R. DiMarco, "RE: Nordine Study" (December 1, 1982), http://legacy.library.ucsf.edu/tid/xmv59d00; "Best Program Review," (May 3, 1991), http://legacy.library.ucsf.edu/tid/gpi73d00.

them of adequate knowledge needed to make accurate evaluations of the dangers of smoking, and thus impairing their ability to fully inform the public of the dangers of cigarette use. Brown & Williamson executives, working with executives from their parent company at British American Tobacco Co. agreed to withhold their research on the addictiveness of nicotine from the Surgeon General's Advisory Committee. If the Committee had the benefit of this concealed research, it might have found that smoking was, as Brown & Williamson executives understood, an addiction rather than a "habituation."[98]

Industry scientists and executives continued to conceal their knowledge and research. Dunn counseled concealment at Philip Morris lest the public and governmental agencies learn what Philip Morris already knew—that nicotine's addictive qualities compelled smokers to keep on using the company's products. In a 1969 memo, Dunn warned Helmut Wakeham, vice president of research: "There are dangerous F.D.A. implications to having such conceptualization [of nicotine as a drug] go beyond these walls."[99] Such policies persisted. Eleven years later, Dunn still acknowledged that concealment policies concerning research on the pharmacology of nicotine still prevailed: "Our attorneys,

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[98] McCormick, A. to Yeaman, A. [Re: Withholding Battelle data from Surgeon General's committee]. 1963 July 04. UCSF Brown & Williamson Collection. Unknown. https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/yfgh0097; U.S. Department of Health, Education, and Welfare, Public Health Service, Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service (Washington: Government Printing Office, 1964), ch. 13 passim.

[99] William L. Dunn, Jr. "Jet's Money Offer" (February, 19, 1969), http://legacy.library.ucsf.edu/tid/iqw56b00.

however, will likely continue to insist upon a clandestine effort in order to keep nicotine the drug in low profile."[100]

Despite the understanding among industry officials that smoker's physical dependence upon nicotine was the foundation of their business, they denied to the public and government officials that nicotine caused either addiction or dependence. For example, in a reply to a consumer's inquiry, an R.J. Reynolds public relations office wrote "the fact is that there is nothing about smoking, or about the nicotine in cigarettes, that would prevent smokers from quitting"[101] In sworn testimony before Congress, and broadcast nationally on television, the CEOs of the leading tobacco firms all denied that they believed that nicotine caused addiction in smokers.[102]

Cigarette manufacturers manipulated the delivery of nicotine through cigarette design innovations, and the manufacturers understood that these design innovations enhanced the delivery of nicotine and promoted sales of the product. Tobacco industry officials never informed the public, smokers, or government about this manipulation. Design innovations included a variety of tobacco blending techniques, the use of flavoring agents, and the implementation of ventilation techniques on the cigarette rod itself.

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[100]William L. Dunn, Jr. "The Nicotine Receptor Program" (March 21, 1980), http://legacy.library.ucsf.edu/tid/xpc50i00.

[101]J.F. Sprach to Elaine Moss, (May 8, 1990), http://legacy.library.ucsf.edu/tid/ywj13a00.

[102]U.S. Congressional Testimony (April 14, 1994). See also Jack E Henningfield, Christine A. Rose, and Mitch Zeller, "Tobacco Industry Litigation Position on Addiction: Continued Dependence on Past Views" Tobacco Control 15 Supplement IV (December 2006): iv27–iv36.

Cigarette manufacturers also employed techniques to manipulate the chemistry of tobacco smoke to promote the release what industry officials described as "free nicotine."[103]

Cigarette manufacturers turned to the manipulation of the chemistry of cigarette smoke to increase the impact of nicotine upon the smoker. R.J. Reynolds systematically explored the role of the manipulation of the pH of cigarette smoke. By adding alkaline compounds to tobacco—often ammonia compounds—cigarette manufacturers could increase the alkalinity of smoke to promote the release of "free nicotine" in the smoke inhaled by the smoker. RJR scientist Claude Teague explained the process in a 1973 research memorandum: "as the amount of ammonia or ammonium salts in smoke increases above a certain level, the smoke becomes less acidic, more nicotine occurs in free, volatile, rapidly absorbed form, and the nicotine impact is enhanced."[104] In another report, Teague drew the connections between manipulation of the delivery of nicotine in cigarette smoke, nicotine "kick" as perceived by the smoker and increased sales. Teague concluded:

> Subsequent detailed analysis by Marketing Research of our pH and "free" nicotine data along with sales data and other factors has confirmed the strongly

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[103] R.J. Reynolds Tobacco Co., "Chapter 34. Casing And Flavoring of Cigarettes" (1985), http://legacy.library.ucsf.edu/tid/fqb64d00; McKenzie, "Product Characterization Definitions and Implications" (September 21, 1976), http://legacy.library.ucsf.edu/tid/rcx73d00.

[104] Claude Teague, "Research Planning Memorandum on the Effects of Ammonia and Its Salts on Smoke Quality" (June 1, 1973), http://legacy.library.ucsf.edu/tid/gqd53d00.

positive correlation between "free" nicotine in smoke (determined by pH and total nicotine in smoke) and market share performance.[105]

Tobacco manufacturers saw the development of therapies for nicotine addiction in the 1980s as a threat to the cigarette business. While the industry took the public position that smoking was a choice for adults, it sought to limit the ability of the public to learn about smoking cessation therapies. In the 1980s, Merrill-Dow, a unit of the Dow Chemical Co., developed Nicorette, a pioneering nicotine-replacement therapy to treat smoking-related nicotine dependence. When Philip Morris director of research, Thomas Osdene, learned of Dow's work in smoking cessation, he sought to leverage Philip Morris substantial purchases of humectants and other chemicals from Dow to change the company's anti-smoking policies. Osdene objected to a smoking cessation newsletter for Dow employees. At subsequent meetings with top executives at Dow and Merrell Dow, the pharmaceutical division that produced Nicorette, Philip Morris officials pressured Dow to modify and cease the smoking cessation information. [106]

Cigarette manufacturers have added new products that deliver addicting nicotine in non-combustible forms to their product line. These vape inhalers, e-cigarettes, and heat-not burn-tobacco/nicotine delivery devices have led to an explosion of youth use,

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[105] Claude Teague, "Implications and Activities Arising from Correlation of Smoke pH with Nicotine Impact, Other Smoke Qualities, And Cigarette Sales" (October 2, 1973), http://legacy.library.ucsf.edu/tid/jbr73d00.

[106]Thomas Osdene "Memo: Merrell Dow Smoking Cessation Newsletter, January 4, 1982," http://legacy.library.ucsf.edu/tid/uwy25e00; Dow-Nicorette Meeting, October 23, 1984, bates: 202379981.

just as the introduction of combustible cigarettes led to an explosion of youth smoking in the 20th century.[107]

Altria, parent company of Philip Morris, has purchased a controlling stake in Juul, the manufacturer of the leading nicotine vaping device, which is produced with a wide array of flavors that appeal to youths. With traditional combustible heavily marketed, public health groups such as the American Heart Association and the American Cancer Society fear a reversal of progress on tobacco control successes of the last decade among young people, and the consequent explosion of tobacco-attributable disease.

CIGARETTE MANUFACTURERS KNEW SMOKERS DID NOT UNDERSTAND THAT NICOTINE WAS ADDICTIVE

Public knowledge and awareness that cigarettes were addictive trailed the awareness that cigarettes caused serious disease. Discussions of quitting smoking tended to portray cigarette cravings as a "habit." In 1954 The Reader's Digest reported that "medically speaking, tobacco is not habit-forming." It advised that smoking is merely "habit-forming in the same way that three meals a day or eight hours sleep or wearing clothes are habit-forming." Cessation of use merely makes the user "uncomfortable".[108] Likewise, the 1964 Surgeon General's Report on Smoking and Health concluded that smoking was a habituation and refused to declare it an addiction. Not until the 1988 Surgeon

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[107] University of Michigan, Monitoring the Future, "Vaping Surges: Largest Year-to-Year Increase in Substance Use Ever Recorded in the U.S. for 10th and 12th Grade Students" (December 17, 2018), http://www.monitoringthefuture.org/pressreleases/18drugpr.pdf.

[108]Herbert Bean, "How to Stop Smoking" The Reader's Digest (April 1954), 31.

General's Report, did the U. S. Public Health Service conclude that smoking was an addiction.[109]

Not surprisingly, the public tended to view smoking as a habit rather than an addiction. The Tobacco Institute's own survey research indicated that 56 percent of smokers in 1980 saw smoking as a "habit" rather than an addiction.[110] Tobacco manufacturers continued to publicly deny that cigarettes were addictive into the mid-1990s both before the United States Congress in sworn testimony and through paid advocacy statements in the national press.[111]

Tobacco industry officials also understood that smokers did not understand the addictive qualities of nicotine use. H. David Steele, a Brown & Williamson marketing executive noted in 1978 consumers simply did not know that nicotine is addictive:

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[109]U.S. Department of Health and Human Services, The Health Consequences of Smoking, Nicotine Addiction: A Report of The Surgeon General (Washington, D.C.: Government Printing Office, 1988).

[110]Roper Organization Inc., "A Study of Public Attitudes Toward Cigarette Smoking and the Tobacco Industry in 1982, prepared for The Tobacco Institute," Bates: 1002665283-5749 (July 1982), 32.

[111]"Hearing of the House Energy & Commerce Committee Subcommittee on Health and the Environment Subject: Nicotine and Cigarettes," (April 14, 1994), Bates: TIMN0431368-TIMN0431522, http://tobaccodocuments.org/ti/TIMN0431368-1522.html; Philip Morris full page advertisement, "Smokers and Non-Smokers: Facts You Should Know," New York Times (April 14, 1994).

> Very few consumers are aware of the effects of nicotine, i.e., its addictive nature and that nicotine is a poison.[112]

Philip Morris researcher, Al Udow, a psychologist with a Ph.D. from Columbia University, explained smoker's confusion and lack of knowledge of nicotine's addictive qualities, writing in an internal memo that "although more people talk about "taste", it is likely that greater numbers smoke for the narcotic value that comes from the nicotine."[113]

FILTER, LIGHT AND LOW TAR CIGARETTES WERE MARKETED AS SAFER PRODUCTS WITHOUT OFFERING ANY HEALTH BENEFIT

In response to public fears that cigarettes caused serious diseases, cigarette manufacturers modified their products, first adding filters and then offering low-tar and light cigarettes in an effort to assuage the smoking public's health fears. Cigarette manufacturers continued to offer these products and advertise them explicitly and implicitly as safer products. Internal industry research confirmed that smokers turned to these products in an effort to reduce the harm of smoking. American Tobacco Co. promoted its Carlton brand, a light cigarette, to the "health conscious" smoker.[114] R.J. Reynolds market research revealed that the smokers of its Winston Lights brand were "concerned about the harmful

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[112]H. David Steele, Jr. to Michael J.McCue, [memo], "Future Consumer Reaction to Nicotine" (August 24, 1978), Bates No. 665043966, http://tobaccodocuments.org/bw/1138107.html.

[113]Al Udow [Philip Morris], The Chemistry of KOOL and a Recommendation (May 24, 1972), http://legacy.library.ucsf.edu/tid/fds74e00.

[114]"Kool Creative Plans," http://legacy.library.ucsf.edu/tid/oyt91d00.

effects of smoking" and turned to light cigarettes as a safer product.[115] Philip Morris market research conducted in 1998 indicated that smokers were turning to lights for health reasons and that its Merit brand cigarette offered "reassurance to more health conscious smokers."[116]

The health reassurance that filter, low-tar and light cigarettes offered smokers undermined the public health and scientific community's message that cigarette smoking caused disease. These products worked to limit efforts to quit smoking altogether and thus maintain cigarette sales and industry profits. The Roper Organization, a market research and public opinion research firm that conducted a series of important studies for the Tobacco Institute identified the threat that health-conscious smokers posed to cigarette sales:

> low tar cigarette smokers . . . are potential cigarette quitters. . . . And more of them than the average have tried to quit smoking. Since low tar smokers are an expanding share of the market, their greater desire to quit smoking poses a special problem for the cigarette industry.[117]

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[115]"Qualitative Consumer Evaluation. 4 Winston Lights Positionings" http://legacy.library.ucsf.edu/tid/oaj29d00.

[116]"Philip Morris Merit Strategic Revitalization Plan Stage I Learnings (Book I)" (1998), http://legacy.library.ucsf.edu/tid/yql27a00.

[117]"A Study of Public Attitudes toward Cigarette Smoking and the Tobacco Industry in 1978: Volume 1, May 1978," http://legacy.library.ucsf.edu/tid/hza72d00.

In other words, filter, low-tar, and light cigarettes allowed the cigarette manufacturers to offer reassurance to smokers to reduce their motivation to quit smoking.

Tobacco industry research on the knowledge and expectations of users of its products confirmed that cigarette smokers relied upon industry statements and turned to filter, low-tar, and light cigarettes with the expectation that they were using safer products. A 1969 industry of smoker's attitudes noted:

> In the past, filter advertising had established a health frame of reference for filter cigarettes. Filters were presented as reducing tar and nicotine and became a reason why for purchasing filter brands. . . Advertising further contributed to the value of filters by discussing efficacy in filtration. . . "[118]

To cigarette manufacturers, smoker's reliance on their advertising was good for business. As the industry study concluded, "filter cigarettes do have the historical connotation of safety which permits the smoker to continue smoking in light of the current anti-smoking publicity."[119]

Cigarette manufacturers understood that filter, low-tar, and light cigarettes, in fact, conferred no reduced risk to the smoker. Myron Johnston, a Philip Morris researcher, understood this when he concluded that all a filter cigarette needed to do to be successful in

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[118]Motivational Programmers Inc & Depth Research Laboratories, "An In-Depth Exploratory Study on Cigarette Smoking Habits and Attitudes" (January 1969) Liggett & Myers Records, pp. 56-57, https://www.industrydocuments.ucsf.edu/docs/hxgn0006.

[119]Motivational Programmers Inc & Depth Research Laboratories, "In-Depth Exploratory Study on Cigarette Smoking Habits and Attitudes," p. 63.

the marketplace was to provide "the illusion of filtration."[120] And an illusion was all smokers ever received. Congressional and Federal Trade Commission investigations found that filters in the 1950s were ineffective and offered no health benefit, even as cigarette manufacturers advertised them as healthier and safer. Later investigations by the National Cancer Institute and the Surgeon General of the United States have found that lights and low tar cigarettes also offered no health benefit.[121]

CIGARETTE MANUFACTURERS CONSPIRED TO MOUNT A FIFTY-YEAR DISINFORMATION CAMPAIGN THAT IMPAIRED THE PUBLIC'S ABILITY TO FULLY UNDERSTAND THE DANGERS OF SMOKING

Despite the internal recognition that cigarettes delivered carcinogens to smokers and that smoking was implicated in a wide array of diseases, the tobacco industry responded health attacks on smoking with a coordinated, well-planned public-relations effort challenging the scientific research linking cigarette use and lung cancer, impairing

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[120]M.E. Johnston, Jr., "Market Potential for a Health Cigarette: Confidential," Special Report No. 248, Bates: 1000338644-8671 (Typescript, June, 1966), http://tobaccodocuments.org/pm/1000338644-8671.html

[121]See Hearings before the Subcommittee of the Committee on Government Operations, House of Representatives, Eighty-Fifth Congress, First Session, "False and Misleading Advertising (Filer tip Cigarettes)" (July 1957); National Cancer Institute, Risks Associated with Smoking Cigarettes with Low Machine-Measured Yields of Tar and Nicotine, Smoking and Tobacco Control Monograph No. 13 (2001); U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress. A Report of the Surgeon General. (Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014).

the public's ability to fully understand the health dangers of cigarette use. On December 15, 1953, Paul Hahn, president of American Tobacco met with executives from leading cigarette manufacturers and the prominent industrial public relations firm Hill and Knowlton to hammer out a strategy for dealing with the onslaught of negative health information about smoking. Hill and Knowlton acted quickly, developing a public relations program that led directly to the formation of the Tobacco Industry Research Committee (TIRC). Creation of the TIRC was announced to the public in the widely publicized "Frank Statement to Cigarette Smokers" which appeared on January 4, 1954, in 448 newspapers across the United States. Signed by nearly all the major cigarette manufacturers, (Liggett & Myers being a notable exception) as well as leading grower's organizations and warehouse associations, the statement pledged that the TIRC would sponsor research "into all phases of tobacco use and health." The industry further pledged that "we believe the products we make are not injurious to health" and that "we accept an interest in people's health as a basic responsibility, paramount to every other consideration in our business." However, the TIRC was more public relations effort than research effort, and its executive director, W.T. Hoyt, was a Hill and Knowlton employee.[122]

The strategy proposed and implemented by Hill and Knowlton for the TIRC sought to discredit negative health claims, impede the flow of legitimate health information to the public, and create doubt and confusion in the minds of the public as to the validity of

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[122]Karen S. Miller, The Voice of Business: Hill & Knowlton and Postwar Public Relations (Chapel Hill: University of North Carolina Press, 1999), 131.

cigarette-related scientific research and the risks of smoking. Hill and Knowlton vice-president Bert Goss sought to place his firm and the TIRC in a position of "knowing what is being written and in getting our side of the story over if an article is scheduled for publication."[123] Hill and Knowlton operatives met with the editors of leading magazines to "encourage use of TIRC material." Industry influence with broadcast media led to revisions and postponements of programs deemed critical of the cigarette industry.[124] The ongoing effectiveness of the TIRC's misinformation efforts is indicated by a June 7, 1961 memorandum to American Tobacco head, Paul Hahn that states "Hill and Knowlton have killed many potential anti-tobacco stories."[125]

TIRC president Timothy V. Hartnett, a former head of Brown & Williamson, and scientific director Dr. Clarence Cook Little embarked on a public campaign to discredit in the mind of the public the science linking cigarette use to disease. Rarely in the 1950s did a newspaper or magazine story on the health aspects of cigarettes get published or a radio or television program air without criticism or rebuttal by either Hartnett or Little. Hartnett would state that statistical studies do not "establish any cause and effect relationship." or they "ignore other important factors that affect disease and longevity."[126] Little, as a

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[123]Bert Goss quoted in Miller, Voice of Business, 132.

[124]Carl Thompson [Hill & Knowlton] to T.V. Hartnett [TIRC] "Report through July 31" (August 17, 1954), box 110, folder 7, John Hill Papers, State Historical Society of Wisconsin, Madison Wisconsin.

[125]Robert K. Heimann to Paul M. Hahn (June 8, 1961), American Tobacco Company.

[126]Radio Reports, "Tobacco Industry Discounts Cancer Society Report" (June 6, 1955), bates no. TIMN0111120-21, http://legacy.library.ucsf.edu/tid/isj92f00.

guest television journalist Edward R. Murrow's highly rated 1955 program on smoking and health, was asked if any cancer-causing components of smoke had been discovered responded. He responded: "None whatsoever, either in cigarettes or in any product of smoking, as such." In the same program, Robert N. DuPuis, a Philip Morris scientist, indicated that after carefully examining the components of smoke, no harmful compounds had been found. He concluded: "if we do find any that we consider harmful, and so far we have not, we'll remove these from smoke."[127]

The tobacco industry also contracted with writers and scientists to speak on its behalf, using seemingly impartial authorities to assure the public that cigarettes were not found to be the cause of any disease. For example, Hill and Knowlton worked with Donald Cooley, a well-known science and health writer, to pen works that reassured smokers that cigarettes were safe. One of the works, whose title "Smoke without Fear" summarizes his position on cigarettes and disease, was published as an inexpensive, twenty-five cent pamphlet with a print run of 350,000. A thousand advance copies were also sent to leading science writers, health writers, and newspapers across the country, ensuring that the work received wide publicity.[128] Hill and Knowlton also contracted with Eric

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[127]CBS, [broadcast transcript], "Transcript of Edward R. Murrow's Second TV Show on Cigarettes and Lung Cancer (June 7, 1955), http://legacy.library.ucsf.edu/tid/hcy68d00.

[128]Hill and Knowlton, "Fawcett Publication, 'Smoke Without Fear'" (September 1, 1954), http://legacy.library.ucsf.edu/tid/jge6aa00. Hill and Knowlton reports assisting the author in a secret report, Carl Thomson, "Report through July 31" (August 19, 1954) Box 110, folder 6, Hill and Knowlton Papers, Wisconsin Historical Society. Representative press coverage is reproduced in "Smokers, Relax and Enjoy It, Says Science Writer" (September 4, 1954), http://legacy.library.ucsf.edu/tid/tia50e00.

Northrup, another prominent health and science journalist, to produce a book exonerating the cigarette. Hill and Knowlton operatives worked closely with Northrup, even to the point of composing the work's title, Science Looks at Smoking: A New Inquiry into the Effects of Smoking on Your Health (New York, 1957).[129] Masquerading as an impartial examination of the science of smoking and health, the book earned favorable reviews in the general press as well as medical journals.[130] By the early 1960s, Northrup's work was included in the widely used teachers' resource published by the well-regarded George Peabody College for Teachers, Free and Inexpensive Learning Materials. Thus, the tobacco industry's message, that cigarettes were not the cause of disease, entered the classroom.[131]

The TIRC's public relations activities continued with the formation of the Tobacco Institute in 1958, while its research function was superseded by the Council for Tobacco Research. As the negative health data flowed into print and broadcast media, cigarette manufacturers remained true to the strategy forged by the TIRC and Hill &

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[129]Leonard Zahn to Richard W. Darrow, "Northrup Book: The Truth about Smoking" (January 12, 1956), http://legacy.library.ucsf.edu/tid/lcy66b00; Zahn to Darrow, "Title of Northup Book" (January 25, 1956), http://legacy.library.ucsf.edu/tid/ncy66b00.

[130]California Medicine (November 1957) 87(5): 358; "No Proof it Causes Cancer" [Review of Science Looks at Smoking] Shreveport Times (July 14, 1957), http://legacy.library.ucsf.edu/tid/efm1aa00.

[131]M.E. Alford, "Letter: Free and Inexpensive Learning Materials," (April 16, 1962), http://legacy.library.ucsf.edu/tid/yeg5aa00; "Re: Booklet, 'Free and Inexpensive Learning Materials,'" (April 25, 1962), http://legacy.library.ucsf.edu/tid/xeg5aa00.

Knowlton. Paul Hahn of American Tobacco succinctly stated the Tobacco Institute's mission in a 1958 memo:

> To defend the tobacco industry against attacks from whatsoever source on tobacco as an alleged health hazard, including efforts to impose labeling requirements on tobacco products based directly or indirectly on the charge that tobacco is a hazard to health.[132]

The much-anticipated Surgeon General's Report on Smoking and Health, released on January 11, 1964, concluded that cigarettes caused lung cancer in men and regular smoking was a habit, not an addiction. While the report was initially issued with much fanfare, its impact on public knowledge of the hazards of smoking was surprisingly limited. By August, the New York Times had reported that "Americans are beginning to forget the cancer scare generated by the government report on smoking," as consumption of cigarettes increased. By December of that year, the paper reported that "the facts have been blurred by the constant avalanche of cigarette advertisements", and that "the public cannot be blamed for ignoring the documented scientific evidence."[133]

Industry leaders and spokesmen continued to deny that cigarettes were implicated in disease, and they promised that CTR research would one day find the true causes of cancer. In 1965, Bowman Gray, chairman of the board of R. J. Reynolds, and speaking on

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[132]Paul Hahn to John W. Hill, February 5, 1958, box 108, folder 11 John Hill Papers, State Historical Society of Wisconsin, Madison Wisconsin.

[133]New York Times (August 14, & December 9, 1964).

behalf of the tobacco industry, testified before the U.S. Senate that "it has not been established that smoking causes lung cancer or any other disease."[134] In 1969, American Tobacco placed a full-page advertisement in the New York Times which stated that "Sure, there are statistics associating lung cancer and cigarettes. There are statistics associating lung cancer with divorce, and even with lack of sleep. … We believe the anticigarette theory is a bum rap."[135] Joseph Cullman, head of Philip Morris, appearing on the news program "Face the Nation" stated the position the industry had maintained since the 1950s: "if any ingredient in cigarette smoke is identified as being injurious to human health, we are confident that we can eliminate that ingredient."[136] The Tobacco Institute's widely-distributed propaganda films "Tobacco and Health: The Need to Know" (1972) and "The Answers we Seek" informed the thousands of boys and girls to whom it was shown that the case against the cigarette was unproven.[137] Other initiatives such as the "Truth" campaign of the 1970s sowed doubt and confusion in the mind of the public on the dangers of smoking. Edward Horrigan, R.J. Reynolds CEO, testified in 1982 before the Senate that "the truth is that after three decades of investigation, no causal link

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[134]United States Senate, 98th Congress, 1st Session, "Hearings before the Committee on Commerce," Cigarette Labeling and Advertising (Washington, D.C.: Government Printing Office, 1965), 245.

[135]New York Times (September 4, 1969).

[136]CBS, [broadcast transcript], "Face the Nation," (January 3, 1971), http://legacy.library.ucsf.edu/tid/jiz28e00.

[137]See the following memos for a discussion of the film: TIMN0004654-4657; TIMN0078203, TINY0013656-3660.

between smoking and disease has been established."[138] In 1984, R.J. Reynolds mounted an issue advocacy campaign calling for an "open debate about smoking," again denying that cigarette use caused any disease.[139] In 1994, the heads of the leading U.S. tobacco programs testified under oath before the U.S. Congress that they did not believe nicotine to be addictive.[140] To emphasize the point, Philip Morris launched an advocacy campaign, advising the American public that it too, did not believe cigarettes and nicotine to be addictive.[141]

In the end, for all the industry's public promises of sponsoring scientific research to find the true causes of lung cancer and other serious diseases implicated with smoking, the TIRC/CTR research effort was, in the words of the general counsel of the Brown & Williamson Tobacco Co., "conceived as a public relations gesture."[142] The true goal was to foster doubt about the validity of the science implicating cigarettes and disease so that the public would continue to smoke. George Weissman, a vice president at Philip Morris, appraised the fallout from the 1964 Surgeon General's Report and concluded that pointing out the "weaknesses" in the report and pointing to the "path for future research" were

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[138]United States Senate, 97th Congress, 2nd Session, "Hearings before the Committee on Labor and Human Resources, March 16, 1982" Comprehensive Smoking Prevention Act of 1981 (Washington, D.C.: Government Printing Office, 1982), 137.

[139]New York Times (January 30, 1984), A11; Washington Post, (January 30, 1984), B4.

[140]"Hearing of the House Energy & Commerce Committee Subcommittee on Health and the Environment Subject: Nicotine and Cigarettes" (April 14, 1994).

[141]New York Times (April 15, 1994), A11.

[142]Addison Yeaman, "Implications of Battelle Hippo I & II and the Griffith Filter," 2.

necessary to "give smokers a psychological crutch and a self-rationale to continue smoking." Another industry official declared in 1969 that when it came to smoking and health, "doubt is our product." Fred Panzer, vice-president of the Tobacco Institute, contemplated the industry's tactics in a memorandum to Horace Kornegay, president of the Tobacco Institute. He observed that "for nearly twenty years, this industry has employed a single strategy to defend itself . . .[by] creating doubt about the health charge without actually denying it . . . [and] encouraging objective scientific research as the only way to resolve the question of health hazard."[143] Thus, a strategy of denial and obfuscation forged in the winter of 1953-54 continued into the 1990s.

FEDERALLY MANDATED WARNING LABELS HAVE BEEN INEFFECTIVE IN IMPACTING PUBLIC KNOWLEDGE ON HEALTH DANGERS OF CIGARETTES

The 1964 Surgeon General's report did provide an impetus for Federal action to place some form of warning notice on cigarette packaging. Soon after the release of the Surgeon General's Report, the Federal Trade Commission proposed a strict labeling regime that would have mandated the following warning statement on cigarette packages: "Cigarette Smoking is Dangerous to Health and May Cause Death from Cancer and other Diseases." However, Congress preempted Federal Trade Commission actions, passing the

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[143]Fred Panzer to Horace Kornegay, "Roper Proposal," May 1, 1972, Tobacco Institute, Bates No.TIMN0254393/4396, http://legacy.library.ucsf.edu/tid/ypd72f00.

Federal Cigarette Labeling and Advertising Act of 1965 which mandated a weak caution statement on each cigarette pack beginning in 1966. The labeling legislation was a "quiet victory" for the industry. The enacted label simply stated, "Caution: Cigarette Smoking May Be Hazardous to Your Health." The legislation also precluded states from more aggressive action, thus relieving the industry of a significant source of anti-smoking regulatory activity.[144] The Federal Trade Commission found this caution statement ineffective in warning consumers about the hazards of smoking. It concluded after the first year of the mandatory statement that "there is virtually no evidence that the warning statement on cigarette packages has had any significant effect."[145]

In 1970, Federal legislation mandated new warning language on cigarette packages: "Warning: The Surgeon General Has Determined that Cigarette Smoking is Dangerous to Your Health." The Federal Trade Commission again found that these warning labels were ineffective in informing the public of the health dangers of cigarette use, concluding:

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[144]Elizabeth Drew, "The Quiet Victory of the Cigarette Lobby" The Atlantic Monthly; 216:3 (September 1965), 76-80.

[145]Federal Trade Commission, "Report to Congress Pursuant to the Federal Cigarette Labeling and Advertising Act" (June 30, 1967), 4.

> the current warning is not effective in curing the deception in cigarette advertising, nor does it provide sufficient information to permit consumers to assess the health risks of smoking accurately.[146]

The tobacco industry did all it could to minimize the impact of Federally mandated warning messages. When customers wrote the manufacturers asking for advice once the new warnings appeared, the tobacco firms would reassure them that smoking was safe. For example, one letter-writer inquired as to what had changed in his cigarette to lead to a change in the labeling: "I take notice of the fact that the warning label on your cigarette packages no longer states 'may be dangerous to health' but quite openly states that the contents are dangerous." R.J. Reynolds responded, not by advising the letter-writer that he was assuming a significant health risk by smoking its products, but instead by denying that cigarettes posted any health dangers, informing him that "a cause-and-effect relationship between smoking and human illness has not been proven" and that "there is no valid experimental evidence confirming the theory that cigarette smoking causes lung cancer or

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[146] Matthew L. Myers et al., "Staff Report on the Cigarette Advertising Investigation (Public Version)" (Washington, D.C.: Federal Trade Commission, May 1981), 4-7. Bates: 2023237258-2023237566, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=szfp0124

any other major human diseases." Hundreds of similar responses exist in the files of the tobacco manufacturers.[147]

The Tobacco Industry's internal market research revealed that the mandatory caution and warning labels did little to deter smokers from continuing to smoke. A secret Lorillard marketing study concluded flatly that "health warnings in advertising and on packages have not deterred consumption."[148]

CIGARETTE MANUFACTURERS CONSPIRED TO INLFUENCE RESEARCHERS, MEDICAL AND PUBLIC HEALTH ORGANIZATIONS WITH THE GOAL OF ADVANCING THEIR POSITION THAT CIGARETTES POSED NO HEALTH RISKS.

Cigarette manufacturers conspired to influence the American Medical Association (AMA) deploying tobacco-friendly scientists connected to the industry to influence their positions on smoking and health. For example, tobacco industry-funded scientist, Harvey B. Haag was a member of the AMAs Council on Drugs. In 1960, the Council considered

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[147]Charles Peckham, [consumer letter to R.J. Reynolds], (June 11, 1971), http://legacy.library.ucsf.edu/tid/fsb95a00; T.K. Cahill [RJR consumer response to Peckham], (June 11, 1971), http://legacy.library.ucsf.edu/tid/lox79d00. See also Huff, L. [consumer letter to R.J. Reynolds Tobacco Co.]. "Just Happened to Read What Was on the Side of a pk. of Camel Cigarettes," (April 12, 1972), http://legacy.library.ucsf.edu/tid/evl61c00 and Clements, L.D. [consumer letter]. "WINSTON On Your Cigarette Packs Are The Words, "Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous To Your Health" (1972) http://legacy.library.ucsf.edu/tid/nqd71d00

[148]Marketing Corporation of America, "Cigarette Promotion Study: P. Lorillard, Work Session I" (1973) http://legacy.library.ucsf.edu/tid/xrd01e00.

a statement on the link between smoking and heart disease at the request of the AMA Board to Trustees as they considered a statement by the Association on smoking and health. Dr. Haag objected in the meeting claiming that there was "insufficient evident to support a statement that smoking causes lung cancer or heart disease." No action was taken on this initiative, and tobacco industry officials concluded that "Harvey's presence on the council probably was the most important factor in preventing any action by the AMA."[149]

TOBACCO MANUFACTURERS KNEW THAT CIGARETTE CONSUMERS FAILED TO UNDERSTAND THE HARMS OF SMOKING

The public, and especially smokers, failed to appreciate the harm cigarettes posed to health. While government and public health organizations sought to educate the public about the risks of smoking, they were stymied by the tobacco industry's campaign of doubt and disinformation. Historical polling data show the success of the cigarette manufacturer's strategy in the 1950s through 1980s. In the 1950s, polling respondents indicated a high level of awareness of the "controversy" or "debate" over the possible links between cigarette use and disease. However, large numbers of respondents indicated ignorance or disbelief in the extent of the health risks of using cigarettes. A January 1954 survey taken immediately after the publication of the cigarette manufacturer's "Frank Statement" shows a majority of respondents (59%) having either no opinion or not

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[149] Harlow-ES ATCo. American Medical Association Stand On Cigarette Smoking-Lung Cancer Controversy. 1960 March 08. American Tobacco Records; Minnesota Documents. Unknown. https://www.industrydocuments.ucsf.edu/docs/tncm0007.

believing that cigarettes are one of the causes of lung cancer.[150] When a June 1954 poll asked ex-smokers "Why did you stop smoking cigarettes," only 3 percent made any mention of cancer.[151] A 1959 study appearing in the New York Journal of Medicine and cited in the Tobacco Industry Research Committee-sponsored Tobacco: Experimental and Clinical Studies: A Comprehensive Account of The World Literature concluded that "only about 1.6% of men with a history of regular cigarette smoking said that they had given up the habit because of reports relating cigarettes to cancer or other diseases."[152]

Cigarette manufacturers conducted extensive research on the health beliefs of smokers and the general public, and incorporated their findings into their advertising, marketing, and product design in an effort to profit from both public ignorance and public anxiety about smoking. Philip Morris discovered in 1953, when filter cigarettes comprised three percent of cigarette sales, that "the overwhelming reason for smoking filter tips are health reasons," a fact that would be exploited with the re-introduction of Philip Morris's Marlboro filter-tip brand.[153]

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[150]Gallup Organization Poll, Jan. 9-14, 1954, Roper Center, Accession No. 0194711.

[151]Gallup Organization Poll, June 12-17, 1954, Roper Center, Accession No. 0034087.

[152]P.S. Larson, H.B. Haag and H. Silvette Tobacco: Experimental and Clinical Studies: A Comprehensive Account of The World Literature (Baltimore: Williams and Wilkins Co., 1961), 779.

[153]George Weissman to R.N. DuPuis, "Memorandum, October 7, 1953," http://legacy.library.ucsf.edu/tid/snv67e00.

Tobacco industry internal research found that the public was either ignorant of the risks of smoking or minimized in ways that did not alter the total consumption of cigarettes (which continued to grow nationally until peaking in 1981-82. See figure 2). A 1959 tobacco industry-sponsored Roper Poll asked respondents to identify from a list of activities those that were "most dangerous to life." Only eleven percent of respondents chose "smoking a pack or more cigarettes a day," while ten percent of respondents in this survey chose "climbing in and out of a bathtub." The study authors concluded that while "cigarettes are regarded as 'bad for you' to a greater extent than other products we asked about, there is surprisingly little concern about the health aspects of cigarettes." And again, Philip Morris discovered that the public perceived filter tip cigarettes as safer than unfiltered cigarettes.[154]

Secret internal tobacco industry research revealed that even the pronouncements of the United States Surgeon General had a limited effect on the public's smoking consumption. An American Tobacco Co. study of smokers in the wake of the 1964 Surgeon General's Report on Smoking and Health concluded that the "net effect of the Report (between January and May) appears to have been slight."[155] A sophisticated study

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[154]Elmo Roper and Associates, "A Study of Attitudes toward Cigarette Smoking and Different Types of Cigarettes," Volume I. (Prepared for Philip Morris, January 1959). The report concluded that "the primary stated reasons for smoking or being interested in smoking filter tips are reasons of health."

[155] Sullivan, Stauffer Colwell & Bayles Inc., [Public Opinion Survey]. "Executive Summary, Consumer Study of Cigarette Smoking Patterns: Two Phase Study." (August 1964), http://legacy.library.ucsf.edu/tid/tuu51a00.

commissioned by Hill & Knowlton for the Tobacco Institute tested public attitudes before the release of the report and used those attitudes as a benchmark to measure change at two points after the report's release. The report concluded that while the release of the Surgeon General's Report on Smoking and Health "commanded a high level of public interest and attention," it resulted in "no sweeping changes in public thinking."[156]

Significant portions of the smoking public were uninformed or skeptical as to the risks of smoking into the 1980s and 1990s. The 1966 Adult Use of Tobacco Survey found that when smokers were asked if cigarettes caused lung cancer, 45 percent of the men and 39 percent of the women responded either "definitely not", "probably not" or "don't know". A 1980 survey found that 49 percent of smokers—or about 25 million people—were unaware that "smoking causes most cases of lung cancer".[157] Public knowledge did increase in the late 1970s and 1980s. By 1981, some 69 percent of smokers indicated a belief that smoking was a cause of lung cancer. However, that meant 31 percent of smokers were unaware or did not believe that smoking causes lung cancer. In 1987, various surveys put the portion of smokers who believed that smoking caused lung cancer at between 75 and 83 percent, again indicating that as many as one-quarter of smokers did not

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[156]Opinion Research Corporation, "The Impact on Public Attitudes of the Surgeon General's Report" (Research Park, Princeton, N.J., March 1964), Liggett & Myers Records, Truth Tobacco Documents, https://www.industrydocumentslibrary.ucsf.edu/docs/#id=kfxg0009.

[157]Matthew L. Myers, "Staff Report on the Cigarette Advertising Investigation (Public Version)." Bates: 2023237258-2023237566 (Washington, D.C.: Federal Trade Commission, May 1981), 17, http://tobaccodocuments.org/pm/2023237258-7566.html.

know that smoking causes lung cancer. When smokers were asked in 1986 "How many cigarettes a day do you think a person would have to smoke before it would affect their health?" a full 25 percent responded "Don't know." [158] It is not surprising, then, that the 1989 Surgeon General's Report concluded that "despite impressive gains in public knowledge [over the period 1964-1989], substantial numbers of smokers are still unaware of or do not accept important health risks of smoking."[159]

Polling data also indicates that the public looked to the tobacco industry for guidance on issues of smoking and health. Surveys conducted in 1964 and 1966 by the Federal Government's National Clearinghouse for Smoking and Health found that two-thirds of female smokers and 55 percent of male smokers agreed with the statement: "Before people will be convinced that cigarette smoking is harmful to health, the tobacco industry itself has to say that smoking is harmful to health", suggesting that the statements and positions of the tobacco industry could have a significant impact on public beliefs. Large portions of the smoking public also accepted the tobacco industry's criticisms of the research on smoking and health. For example, large majorities of smokers (63 percent of men and 60 percent of women) agreed with the statement: "the connection between smoking and disease is not yet proved because it is only based on statistics," indicating a

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[158]United States Department of Health and Human Services, Reducing the Health Consequences of Smoking: 25 Years of Progress, A Report of the Surgeon General, 1989 (Rockville, MD: Office on Smoking and Health, 1989), 184, 190.

[159]United States Department of Health and Human Services, Reducing the Health Consequences of Smoking: 25 Years of Progress, 244.

high level of belief in the tobacco industry's claim that epidemiological methods were inadequate for ascertaining the health risks of cigarettes.[160]

Teenagers were especially vulnerable to misperceptions of the health hazards of smoking. By the late 1960s, while teenagers were generally aware that smoking was to some degree hazardous to health, they had very little sense that they would personally suffer the health consequences of their own smoking. An important 1970 National Clearing House for Smoking and Health study of teenage smoking concluded that teenage smokers see smoking as "detrimental to health at some time in the far distant future, perhaps at middle age, but that they can smoke for a few years while they are young and quit later as they approach the age when cigarettes might hurt them.[161] Such misperceptions persisted. A 1975 study found that over half of teenagers (52 percent of girls and 54 percent of boys) thought that the dangers of smoking were "exaggerated."[162]

The Tobacco Industry also understood that teenagers under eighteen failed to appreciate the risks of smoking. Claude Teague, of the R.J. Reynolds Co., observed that

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[160]National Clearinghouse for Smoking and Health, Use of Tobacco; Practices, Attitudes, Knowledge, and Beliefs: United States, Fall 1964 and Spring 1966 (Washington, D.C: U.S. Department of Health, Education and Welfare, Public Health Service, July 1969), 128, 743, 727.

[161]U.S. Public Health Service, National Clearinghouse for Smoking and Health, Teenage Smoking: National Patterns of Cigarette Smoking, ages 12 through 18, in 1968 and 1970 (Rockville, Md: National Clearinghouse for Smoking and Health, 1970), 7. Bates No. 508124383/4532, http://legacy.library.ucsf.edu/tid/gkn04d00.

[162]United States Department of Health and Human Services, Reducing the Health Consequences of Smoking, 214

teenagers do not appreciate the risks of smoking. Indeed, since the "desire to be daring is part of the motivation to start smoking," he noted that the "alleged risk of smoking may actually make smoking attractive." Teague concluded that "in this sense the warning label on the package may be a plus" in heightening the risk appeal to teenagers experimenting with cigarettes.[163]

Overall smokers in the 1970s and 1980s had little understanding of the extent to which cigarette smoking posed a danger to health. A Federal Trade Commission Report found in the 1970s that while smokers are aware that cigarettes are in some vague way "hazardous," they lacked adequate information as to the "nature and extent of the health risk of smoking."[164]

The general public—smoking and non-smoking—tended to underestimate the dangers to health of smoking when compared to other health risks. In a 1983 Harris survey, 103 health experts rated "not smoking" as the most significant behavior to promote health in the general population, ahead of such behaviors as wearing seatbelts, never drinking and driving, and exercising regularly. On the other hand, a sample of 1,254 adults rated

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[163]Claude Teague, Research Planning Memorandum on Some Thoughts about New Brands Of Cigarettes For The Youth Market, R.J. Reynolds (1973).

[164]Matthew L. Myers et al., "Staff Report on the Cigarette Advertising Investigation (Public Version)" (Washington, D.C.: Federal Trade Commission, May 1981), 9. Bates: 2023237258-2023237566, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=szfp0124.

not smoking a mere tenth among a list of health behaviors, behind having smoke detectors, controlling stress and taking enough vitamins.[165]

TOBACCO INDUSTRY ADVERTISING, MARKETING, PROMOTION, AND DISINFORMATION DIRECTLY IMPACTED SANDRA CAMACHO

Sandra Camacho, born in 1946 in Chicago, resided in the Chicago metropolitan region until moving to Las Vegas, Nevada around 1990. Ms. Camacho began smoking at age eighteen, and smoked L&M cigarettes regularly until switching to Marlboro in 1990, and Basic cigarettes around 2000 before quitting upon receiving a diagnosis of cancer in 2018.

Sandra Camacho began smoking at age eighteen when she received an L&M cigarette from a friend. She testified that she chose that brand "because I thought they were safe," something she indicated that she learned from "billboards, magazines and I wanted filter cigarettes. ·I thought they were safer than nonfilter." When asked "safer in what way?" Camacho replied, "Less nicotine." [166]

L&M's manufacturer, Ligget & Myers, had a long history of advertising the brand as safer and low in nicotine due to its "Miracle Tip Filter." For example, in 1954, Liggett advertise L&M in the Chicago Tribune as "Just What the Doctor Ordered." Liggett told the pubic that the cigarette's "Miracle Tip" filter, was the "result of 3 years of scientific

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[165]United States Department of Health and Human Services, Reducing the Health Consequences of Smoking, 214.

[166] Sandra Camacho Deposition, Vol. II (November 3, 2021), p. 146:10-21; 149:24-25.

research" and provided "effective filtration" with "much less nicotine." Federal authorities enjoined cigarette manufacturers from making such explicit health claims in the 1950s, but the emphasis on the "Miracle Tip" continued, providing an enduring cultural and advertising reference to health protection (see representative advertisements from the Chicago Tribune in Appendix I, Figure 5 of this report). Anthony Camacho, also a smoker, testified that he and his wife "were under the impression that it was safer to use filters, and it would filter out all the chemicals that were in there that they didn't want us to inhale."[167] Cigarette manufacturers knew that smokers who purchased and used their filtered, products tended to do so out of a belief that these were safer.

Other tobacco advertising messages impacted Sandra Camacho. She testified to seeing billboards during her time in Chicago. Tobacco product billboard advertising pervaded Chicago. A survey of tobacco billboards in Chicago, conducted from August 1990 to April 1991 found that Chicago was inundated with billboard advertising for tobacco products. Minimizing and concealing the health dangers of smoking even applied to tobacco industry billboards. For example, Brown & Williamson's policy forbade siting billboards near advertisements for "Heart Fund" or near funeral homes and cemeteries, or where "similar advertising can be viewed at the same time."[168]

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[167] Anthony Camacho Deposition (November 4, 2021), p. 99:19-22.

[168] "Field Representatives Operations Manual Out-Of-Home Media Brown & Williamson, Inc.," (May 12, 1976), p. 8, Brown & Williamson Records, https://www.industrydocuments.ucsf.edu/docs/qzvb0100.

The Federal Trade Commission, assessing the ubiquity of cigarette advertising in the late 1960s, concluded that "cigarette advertising reaches virtually all Americans who can either read, or understand the spoken word" and that "so pervasive is cigarette advertising[,] that it is virtually impossible for Americans of almost any age to avoid cigarette advertising."[169]

Cigarette manufacturers intended for the public to rely upon their advertising messages. Robert Karl Heimann, former CEO of the American Tobacco Company, testified in 1986 that "Yes, our advertising is truthful, and we anticipate that they [consumers] would rely on it if they chose, certainly."[170]

Sandra Camacho became a regular smoker of L&M cigarettes from her initiation as an eighteen-year-old in Chicago, smoking one to two packs a day." In 1990, she and her husband, Anthony Camacho moved to Las Vegas, Nevada. There, she switched to Marlboro Reds, manufactured by Philip Morris, USA, largely due to the difficulties in finding L&M in her local stores. Later around the year 2000, she switched to Basic, also

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[169] C. M. Faino, "Competitive Intelligence Research Report. Competitive Profiles: Domestic Cigarette Companies," (June 29, 1982) RJ Reynolds Records, https://www.industrydocuments.ucsf.edu/docs/qfpj0103; Federal Trade Commission, "Report to Congress, Pursuant to the Federal Cigarette Labeling and Advertising Act" (June 30, 1967).

[170] Deposition of Robert Karl Heimann, Ph.D., December 19, 1986, Horton V. American Tobacco Co. (December 19, 1986) Depositions and Trial Testimony (DATTA), https://www.industrydocuments.ucsf.edu/docs/tjlp0018.

a Philip Morris product, as an economy measure when Marlboro's became too expensive.[171]

As a young adult in the late 1960s to the 1980s, Sandra Camacho and her husband smoked regularly at a time when cultural and social practice allowed smoking in nearly every public and private space imaginable. Cigarette manufacturers and their agents encouraged these practices and opposed efforts to restrict smoking in public places. Ms. Camacho worked variously as a beautician, waitress, and convenience store retail clerk. At each of these workplaces, she was able to smoke either in a break room or a spot in the near her work where she could "have a couple of puffs." At this time, restaurant patrons could smoke.[172]

Upon moving to Las Vegas, Sandra Camacho would frequent the city's various casinos for entertainment. Cigarette manufacturers targeted casinos in their marketing plans. Such targeted marketing grew in importance after the Master Settlement, which put restrictions on billboards and sponsorships. A 1999 Philip Morris USA report informs its sales staff that Las Vegas is "America's most smoker friendly city in which an entire economy is built around people's right to smoke." The report further explained to the company's sales staff that Las Vegas had the highest rate of adult smoking among

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[171] Sandra Camacho Deposition, Vol. II (November 3, 2021), pp. 154:14, 160:20-23; 161:13-20. Anthony Camacho Deposition (November 4, 2021), p. 113:7-13.

[172] Sandra Camacho Deposition, Vol. II (November 3, 2021). Her smoking while working as a beautician is discussed at p. 115: 9-21; as a waitress at pp. 109:11-25; 110:1-6; and as a convenience store retail clerk at p.117, 16-19.

American cities at 36.2 percent. Philip Morris products sold exceptionally well in Nevada, holding a 59 percent share of the market. As the report explained, the banning of billboards by the Master Settlement provided the opportunity to invest in "point of sale" advertising, casino-specific marketing, and new promotions such as "Marlboro Bar Nights." In the end, Philip Morris sales executives saw the Master Settlement restrictions as simply the opportunity to "create new venues to market, merchandise, and grown the cigarette category."[173]

Warnings had little impact on Sandra Camacho's understanding of the health dangers of cigarette use. When asked about the 1966 cigarette pack caution statement mandated by federal legislation, she replied, "I do not remember." She answered similarly when asked to recall the implementation of the Surgeon General's pack warning in 1970, and the rotating warnings implemented in 1985.[174] As discussed above in this report, warnings made little impact upon smokers (pp. 69-72).

The Camacho's both testify that they relied on industry statements assuring the public that cigarettes were not the cause of any health harms to smokers. Anthony Camacho testifies that he and his wife watched television coverage of tobacco industry statements made before the United States Congress. When asked if she relied upon

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[173] Philip Morris' Sales Team of Las Vegas. (October 6, 1999) Philip Morris Records; Master Settlement Agreement, https://www.industrydocuments.ucsf.edu/docs/jyxl0046.

[174] Sandra Camacho Deposition, Vol. II (November 3, 2021), pp. 122:223-25, 123:1, 128:11-23.

tobacco industry statements, Sandra Camacho replied, "sure did" and "kept on smoking" because of that reliance: [175]

Sandra Camacho tried many times to quit smoking. She testifies to attempting to quit in the 1990s using Nicorette Gum, but only able to last one day. She threw away cigarettes and hid lighters and ashtrays. She made "over ten or more" attempts to quit, all unsuccessful.[176] While Sandra Camacho displays some confusion as to quitting in 2017 or 2018, her husband Anthony Camacho testifies that she quit upon receiving her cancer diagnosis. [177]

FOOD AND DRUG ADMINISTRATION REGULATION HAS NOT CURTAILED THE ADVERTISING, MARKETING, AND PROMOTION OF COMBUSTABLE CIGARETTES

With its regulatory roots in the Pure Food and Drug Act (1906), the Food Drug and Cosmetics Act (1938), and subsequent amendments, the Food and Drug Administration (FDA) is charged with "protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological products, and medical devices;

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[175] Anthony Camacho Deposition (November 4, 2021), p. 148:12-16, Sandra Camacho Deposition (December 7, 2021), p. 236:1-3.

[176] Sandra Camacho Deposition (December 7, 2021), pp. 207:17-25; 208:1-5; 209:10-11; 211:13-15; 212:1.

[177] Anthony Camacho Deposition (November 4, 2021), p. 191:17-25. Scientists have found that "health shocks" often influence smoking behavior among long-term smokers. See Frank A. Sloan, et al. The Smoking Puzzle: Information, Risk Perception, and Choice (Harvard University Press, 2003), pp. 129-156.

and by ensuring the safety of our nation's food supply, cosmetics, and products that emit radiation."[178]

Historically, tobacco industry leaders opposed FDA regulation of tobacco products. Liggett Counsel Frederick P. Haas's September 3, 1963, minutes of a meeting of the Tobacco Institute's Ad Hoc Legal Committee preserve a discussion of the threat of possible impending FDA regulation under the legal umbrella of the Hazardous Substances Labeling Act of 1961.[179] A 1977 R.J. Reynolds planning report identified potential FDA regulation as an existential threat to the industry. D.H. Piehl, the RJR executive who compiled the report, warned:

> However, should tobacco products ever come under the jurisdiction of the FDA it would have a drastic effect on the industry and consumer. Application of the Delaney Clause to tobacco products would put the industry out of business.[180]

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[178] Office of the Commissioner, "What We Do," FDA (FDA, November 3, 2018), https://www.fda.gov/about-fda/what-we-do.)

[179] Frederick P. Haas, "Surgeon General's Committee [Memo]" (Memo), Truth Tobacco Industry Documents, accessed December 19, 2015, https://industrydocuments.library.ucsf.edu/tobacco/docs/#id=ytmf0028.

[180] D. H. Piehl, "Planning Assumptions and Forecast for the Period, 1978-1987+," May 10, 1977, R.J. Reynolds Records, Truth Tobacco Industry Documents, https://www.industrydocuments.ucsf.edu/docs/pgyb0094; United States Code, 2010 Edition, https://www.govinfo.gov/content/pkg/USCODE-2010-title21/html/USCODE-2010-title21-chap9-subchapIV-sec348.htm.

The Delaney Clause referred to a 1958 addition to the FDA mandate stipulating that "no additive shall be deemed to be safe if it is found to induce cancer when ingested by man or animal, or if it is found, after tests which are appropriate for the evaluation of the safety of food additives, to induce cancer or man or animal."[181]

The FDA moved to extend its regulatory reach over tobacco products in 1996, relying upon the tobacco industry's actions in designing cigarettes as nicotine delivery devices. Cigarette manufacturers promptly sued, and the matter ended in U.S. Supreme Court, which ruled in the industry's favor in 2000.[182]

With the passage of the Family Smoking and Tobacco Control Act of 2009, Congress established FDA regulatory authority over tobacco products. The FDA now regulates and restricts tobacco advertising and marketing practices. The law bans most, but not all, fruit, and candy flavored cigarettes. The law bans such descriptive terms as "light" and "mild." The FDA has new powers to prevent purchases of tobacco products by minors. The FDA can regulate nicotine levels in cigarettes. The law directs the FDA to devise and implement new warning labels on tobacco products packaging and advertising. Tobacco manufacturers must disclose the ingredients in their products. New tobacco products must undergo premarket review to ensure that the meet an "appropriate protection of public health." The law also established a new unit of the FDA, the Center for

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[181] U.S. Code Title 21 Chapter 9 Subchapter Iv § 348.

[182] FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120 (2000).

Tobacco Products, to establish standards and oversee the law, funded by user fees paid by tobacco manufacturers.

However, the law has limitations. Tobacco products are not regulated under the standard of safe and effective, as applies to drugs and other products subject to FDA regulation. The FDA may not ban the manufacture and sale of combustible cigarettes. It may not require the complete elimination of nicotine from cigarettes, although it could mandate levels below that which causes and sustains addiction. The act grandfathers in tobacco products that were sold on February 15, 2007, or before and exempts them from premarket review.

Despite FDA regulation, tobacco manufacturers have been able to introduce new line extensions to their product lines under the "Substantial Equivalence" process. This component of the Tobacco Control Act allows tobacco manufacturers to introduce new or modified tobacco products if they are found to be similar to an existing grandfathered product or do not raise new issues of public health. New products sold after February 15, 2007 can continue to be sold under a provisional substantial equivalence order if application was submitted by March 22, 2011.

Today, tobacco manufacturers often tout the fact that they are a regulated industry. But that regulation has not curtailed the advertising, marketing, and promotion of combustible cigarettes. FDA regulation under the Tobacco Control Act has in practice, allowed established cigarette manufacturers to conduct their business as before, with the added benefit of creating new barriers to entry by competitors. The Substantial Equivalence procedures have allowed tobacco manufacturers to introduce new and modified

products as long as they are extensions of previously sold products. Industry legal challenges to the FDA's proposed graphic warnings mean that this part of the law has gone unimplemented some eleven years after the law's passage. Menthol is still used as a flavoring additive, despite its well-documented use by minors.[183] There has been no regulation of nicotine levels. Point-of-sale advertising at markets, gas stations, and convenience stores, all places frequented by youth, are still heavily employed to promote tobacco products.

SAFER ALTERNATIVE DESIGNS HAVE BEEN FEASIBLE

Cigarette manufacturers have designed their products to deliver addicting levels of nicotine through the inhalation of smoke into the lungs. Alternative designs exist in the historical record that contain very low levels of nicotine in the cigarette rod, or are non-inhalable, or deliver nicotine in noncombustible forms. Despite the development of these designs, cigarette manufacturers have continued to sell traditional combustible cigarettes which cause the injury of addiction and deadly disease.

Cigarette manufacturers have long possessed the ability to create nicotine-free tobaccos, therefore creating a product that would not inflict the injury of addiction. In 1930, the American Tobacco Co. announced that it could cultivate tobacco so that "the nicotine

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[183] Kim Klausner, "Menthol Cigarettes and Smoking Initiation: A Tobacco Industry Perspective," Tobacco Control 20, no. Suppl_2 (May 2011): ii12–19, https://doi.org/10.1136/tc.2010.041954.

content can almost be entirely eliminated."[184] Consumer interest in denicotinized tobacco products reaches back at least to the 1920s. Brands such as Sano, O-Nic-O, and Sackett Cigarettes were promoted as denicotinized or low nicotine. While contemporary testing of these various brands revealed that they only contained slightly lower levels of nicotine—approximately half that in contemporary tobacco products—their presence on the marketplace indicates consumer interest in denicotinized products.[185]

Philip Morris executives contemplated producing a low nicotine cigarette in 1963. Acknowledging internally that nicotine caused damage to the cardiovascular system, Philip Morris' vice president for research, Helmut Wakeham explained to senior management that "if forced to, we could produce a fairly tasty low nicotine product."[186]

Over a quarter century later, in 1989, Philip Morris USA introduced Next "de-nic" which was followed by Merit Free and Benson & Hedges "de-nic". These brands were marketed as combustible cigarettes that had very low levels of nicotine.[187] Vector Tobacco later introduced Quest cigarettes, which offered a series of progressively lower

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[184] No Author, "Nicotine Content of Tobacco Can Be Diminished Or Increased By Natural Means, German Research Institute Reports Successful Experiments [Press Release]" (December 1, 1930), https://www.industrydocuments.ucsf.edu/docs/#id=shvn0137.

[185] E. M. Bailey, O. L. Nolan, and W. T. Mathis, "'Denicotinized' Tobacco," Fifty-First Report of the Connecticut Agricultural Experiment Station (1927), 338–51, https://hdl.handle.net/2027/mdp.39015073297908.

[186]Wakeham, H. "Technical Forecast," (October 24, 1963) Philip Morris Records, https://www.industrydocuments.ucsf.edu/docs/sycp0002.

[187] "Low-Nicotine Cigarette for Philip Morris: Philip Morris Planning to Offer a Low-Nicotine Cigarette" New York Times (June 1, 1989), D1.

nicotine cigarettes to allow a step-down approach to weaning a smoker from nicotine dependence. Public health groups criticized these products as still possessing enough nicotine to cause and sustain nicotine dependence. These brands were also combustible cigarettes whose smoke was inhaled into the lungs.[188]

The propensity for smokers to inhale cigarette smoke (as opposed to pipe and cigars) was a criticism levied by anti-cigarette activists from the beginning of the cigarette epidemic in the early 20th Century. One English critic noted in 1903 that the practice of inhaling smoke "has only come into vogue in this country during the last few years."[189] Public health authorities advised smokers to "avoid inhaling." Alton Ochsner warned that "deliberately inhaling adds greatly to the amount of carcinogens and other tobacco poison to which you expose the respiratory tract."[190]

Indeed, cigarette manufacturers designed their products to be more easily inhaled through design factors, largely by using flue-cured tobacco in their blends, and by adding sugars, menthol, and other additives that improved inhalability of the smoke into the lungs and enhanced the delivery of nicotine (see p. 61-68 of this report).[191]

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[188] "Philip Morris is Criticized" New York Times (April 8, 1991), D4.

[189] William Chambers and Robert Chambers, "Confessions of a Cigarette-Smoker," Chambers Journal, vol 80 (1903), pp. 4-8.

[190] Alton Ochsner, Smoking and Cancer, A Doctor's Report. (New York, 1954), http://hdl.handle.net/2027/uc1.b4425337.

[191] Carroll G. Tompson, "Chemical Modification of Burley Tobacco," R&D Scientific Information Services Library, R. J. Reynolds Tobacco Company, November 4, 1954, R.J. Reynolds Records, Truth Tobacco Industry Documents,

Public health advocates called for the industry to develop non-inhalable cigarettes as a means of reducing the burden of cigarette-induced disease, disability, and death. Dr. George E. Moore, Director of Public Health Research, New York State Department of Public Health, Roswell Park Memorial Institute, Buffalo N.Y., testified before the United States Senate:

> One important and practical technique would be to alter the smoke in such a way that it cannot be inhaled. We know that only a few cigar and pipe smokers inhale. This affords them a great protection from some smoking hazards. One reason for this is that cigar and pipe smoke is more alkaline that cigarette smoke.[192]

Tobacco industry scientists also understood that the inhalation of cigarette smoke exposed a significant health danger to the smoker. William Farone, Director of Applied Research at Philip Morris, 1977-1984 wrote to Leo F. Meyer, manager of Philip Morris' "New Product Division" to suggest that the company develop "a cigarette that does not require inhalation." Farone noted that "it should be obvious that the ultimate in the move to low delivery cigarettes is to obtain some kind of smoking satisfaction while delivering

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https://idl.ucsf.edu/docs/#id=jkcl0222; L. A. Elson and T. E. Betts, "Sugar Content of the Tobacco and PH of the Smoke in Relation to Lung Cancer Risks of Cigarette Smoking," Journal of the National Cancer Institute 48, no. 6 (June 1972): 1885–90.

[192] Testimony of Dr. George E. Moore, "Reviewing Progress Made toward the Development and Marketing of a Less Hazardous Cigarette," Hearings before the Consumer Subcommittee of the Committee on Commerce United States Senate, Ninetieth Congress, First Session, August 23, 24 and 25, 1967, Serial No. 90-52. https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=pxxf0189.

no materials to the lung." Farone explained that "one type of appropriate technology [to achieve a non-inhalable cigarette] would seem to be to raise the pH of smoke to achieve nicotine transfer in the mouth."[193]

Cigarette manufacturers also designed and marketed nicotine delivery devices that allowed the release of aerosolized nicotine without the dangerous particulate components in cigarette smoke. In 1966 Charles Ellis, a senior scientist with British American Tobacco Co. [BAT], then parent company of the Brown & Williamson Tobacco Co., patented a "smoking device" that would deliver nicotine without "the products of combustion." This patent was the product of an extensive BAT research product codenamed "Project Ariel." This device was never brought to market.[194]

R.J. Reynolds developed and marketed a device that delivered aerosolized nicotine to the user. Named Premier, it was released in test markets in 1988.[195] A modified

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[193] William A. Farone, "New Cigarette Products," (September 24, 1981) Philip Morris Records; Master Settlement Agreement. https://www.industrydocuments.ucsf.edu/docs/zgwx0119; For Leo f. Meyer's position in Philip Morris, see Leo F. Mayer. 1982. Philip Morris Records; Master Settlement Agreement. Unknown. For an account of William A. Farone's career at Philip Morris, USA, see, Written trial testimony of William Anthony Farone, Ph.D., accepted October 6, 2004, United States Of America V. Philip Morris USA Inc. October 6, 2004, https://www.industrydocuments.ucsf.edu/docs/qnml0001, p. 2 lines 2-4, 15-16.

[194] United States Patent Office, "Smoking Device" Patent No. 3,258,015, June 28, 1966. See also, Stephan Risi, "On the Origins of the Electronic Cigarette: British American Tobacco's Project Ariel (1962–1967)," American Journal of Public Health 107, no. 7 (July 2017): 1060–67, https://doi.org/10.2105/AJPH.2017.303806.

[195] J. S. Carpenter, "Test Market (Premier)," October 28, 1988, R.J. Reynolds Records, Truth Tobacco Industry Documents, https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=hsbb0090.

version, renamed Eclipse, entered the market a decade later. Both relied on heat-not-burn technologies. More recently, R.J Reynolds Vapor Co., a subsidiary of Reynolds American, Inc the parent company of R.J. Reynolds Tobacco Co., introduced the VUSE vape pen. This product uses a nicotine cartridge to deliver a nicotine aerosol to the user. Similar products such as the now-discontinued MarkTen (owned by Altria, parent company of Philip Morris USA), IQOS (owned by Philip Morris International and marketed in the USA by Philip Morris USA) and JUUL (partially owned by Altria) have been introduced into the marketplace. All suffer the design defect of delivering nicotine in levels that can induce and sustain physical dependency and addiction.

THE HUMAN AND ECONOMIC COSTS OF SMOKING HAVE BEEN ENORMOUS

Tobacco use has been related to numerous cancers, including cancers of the bladder, cervix, colon and rectum, esophagus, larynx, lip, liver, lung, oral cavity, pharynx, pancreas, kidney, stomach, and gastric organs as well as acute myeloid leukemia. Cigarettes cause pulmonary disease, including COPD, pneumonia, emphysema, and bronchitis. Cigarette use causes cardiovascular disease, including atherosclerosis and congestive heart failure. The health dangers of smoking are not limited to smokers. Exposure to second-hand smoke also causes cancer and heart disease in non-smokers. Smoking among also increases the risk of a host of perinatal conditions including miscarriage and sudden

unexpected infant death (SUID).[196] Cigarettes are also a significant cause of residential fires.

During the period 1964-2014 over 20 million Americans have died from smoking induced diseases. Over 5 million smokers have died from lung cancer; 1.6 million smokers have died from other cancers attributed to tobacco use. Cardiovascular and metabolic diseases have caused an additional 7.8 million smoker deaths, while pulmonary diseases have caused the deaths of an additional 3.8 million smokers.

Non-smokers exposed to second-hand smoke face enormous health risks. During the period 1964-2014, 108,000 children died of smoking-attributable perinatal conditions. Secondhand smoke caused the cancer deaths of 263,000 non-smokers and the coronary heart disease deaths of another 2.2 million non-smokers. Another 86,000 were killed in residential fires caused by cigarettes.[197]

Cigarette smoking has also imposed an enormous morbidity burden upon the American people. In addition to the disease and disability imposed by the deadly conditions indicated above, cigarette use in early pregnancy is casually related to ectopic pregnancy and congenital malformation such as orofacial clefts. Cigarette use is casually related to

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[196] Tatiana M. Anderson et al., "Maternal Smoking Before and During Pregnancy and the Risk of Sudden Unexpected Infant Death," Pediatrics, (March 11, 2019), e20183325, https://doi.org/10.1542/peds.2018-3325.

[197] U.S. Department of Health and Human Services. The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. Printed with corrections, January 2014, table 12.15.

age-related macular degeneration, diminished immune system function, and rheumatoid arthritis.

Cigarette smoking morbidity and mortality has imposed an enormous economic burden, both in lost economic activity and in direct expenditures for treating cigarette-attributable disease. Cigarette attributable morbidity imposes a steep economic toll in lost productivity. The annual value of lost productivity averaged $150.7 billion during the years 2005-2009. Total health care expenditures to treat cigarette-attributable disease among current and former smokers, age 35+, for just the year 2012 amounted to $175.9 billion.

CIGARETTE MANUFACTURERS, AS ADJUDICATED RACKETEERS, HAVE BEEN COMPELLED TO DISSEMINATE CORRECTIVE STATEMENTS BY THE FEDERAL COURTS

In 2006, cigarette manufacturers were found by the Federal Courts to have had "for decades conspired to deny the health effects of smoking in violation of RICO."[198] As adjudicated racketeers, cigarette manufacturers have been compelled by the Federal Courts to publish and broadcast "corrective statements" informing the public that their products kill hundreds of thousands each year, that cigarettes cause addiction and that the

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[198]Judge Gladys Kessler, "Final Opinion, August 17, 2006" *United State of America v. Philip Morris USA, Inc., et al.,* (United States District Court for the District of Columbia. Civil Action No. 99-2496 (GK); "Memorandum Opinion, June 27, 2017" *United State of America v. Philip Morris USA, Inc., et al.,* (United States District Court for the District of Columbia. Civil Action No. 99-2496 (GK).

cigarette manufacturers designed their products to cause addiction, that light, and low tar cigarettes offer no health benefit, and that second-hand smoke also causes disease and death.

CONCLUSION

Knowledge among the public that cigarettes cause disease and that they are addictive developed slowly in the face of a concerted disinformation campaign by the tobacco industry. Even today, smokers evince significant gap of knowledge about the dangers to their health by their cigarette use. The development of the public's understanding of the risks of smoking was impeded by the efforts of the cigarette industry to sow doubt and confusion in the minds of the smoking public as to the true risks of smoking. While publicly denying any risk to smoking, internally, tobacco industry officials understood that cigarettes cause cancer and other deadly diseases, that they shorten life, and that they were physically addictive. Cigarette manufacturers have, through various technological means, enhanced the impact of nicotine—and thus the addictiveness of cigarettes. Cigarette manufacturers have implemented design features such as filters, light, and low tar formulations which they have promoted as safer products while offering no actual health benefit.

Tobacco industry officials, spokespeople, executives, and other agents of the industry never informed the public of what they secretly knew about the deadly effects of using their products. Despite assurances to the public as early as 1954 that "if-we had any thought or knowledge that in any way we were selling a product harmful to consumers,

we would stop business tomorrow," the industry continued to manufacture deadly, addictive products.[199]

To this day, cigarette manufacturers have not voluntarily admitted that they intentionally deceived and lied to the American public, including their customers, regulatory officials, public health and medical officials, and elected officials about their knowledge of the health dangers of cigarette use, including addiction to cigarette delivered nicotine. Cigarette manufacturers have never acknowledged that they have marketed their products to children. They have not voluntarily admitted that filter, light, and low tar cigarettes offer no health benefit and that they have long known this fact. Cigarette manufacturers have not voluntarily admitted that they manipulate cigarette design to promote nicotine delivery and addiction. They have not voluntarily acknowledged that cigarette-induced nicotine addiction leads to deadly diseases. They have not admitted that cigarettes now cause the premature deaths of some half-million Americans each year.

As cigarette manufacturers move into new nicotine-delivery technologies, the United States faces another epidemic of nicotine addiction, unraveling years of public health progress.

My research is ongoing. This report documents only a fraction of the materials I have reviewed in forming my opinions in this matter.

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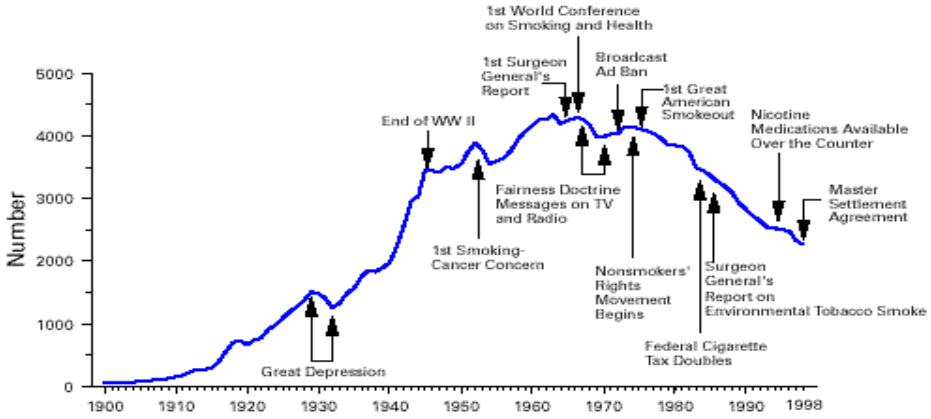
[199] Weissman, George. Public Relations and Cigarette Marketing. 1954. Philip Morris Records. Unknown. https://www.industrydocuments.ucsf.edu/docs/nqxf0189.

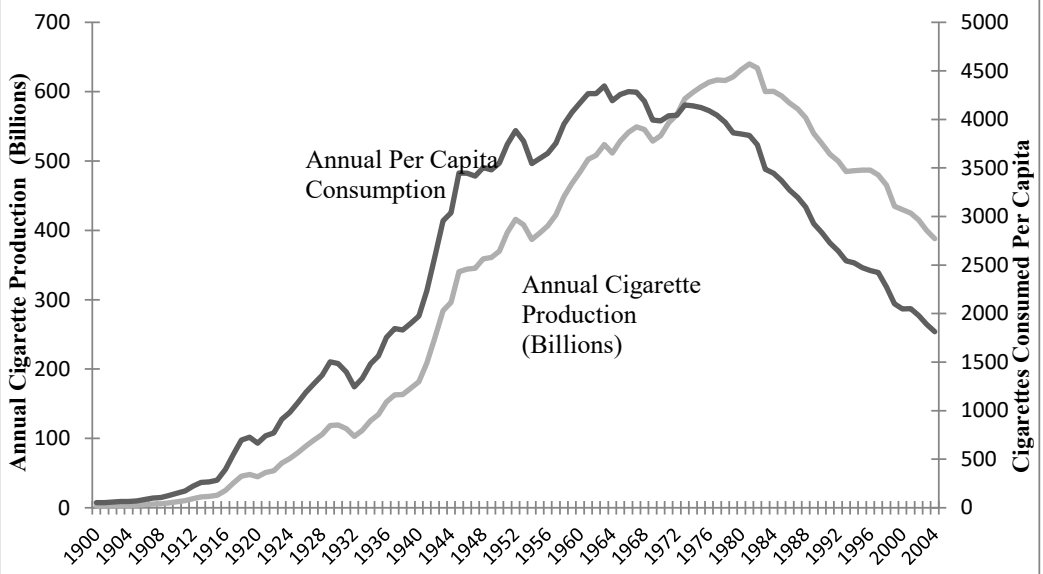
APPENDIX I: FIGURES 1-5

FIGURE 1. Annual adult per capita cigarette consumption and major smoking and health events — United States, 1900–1998



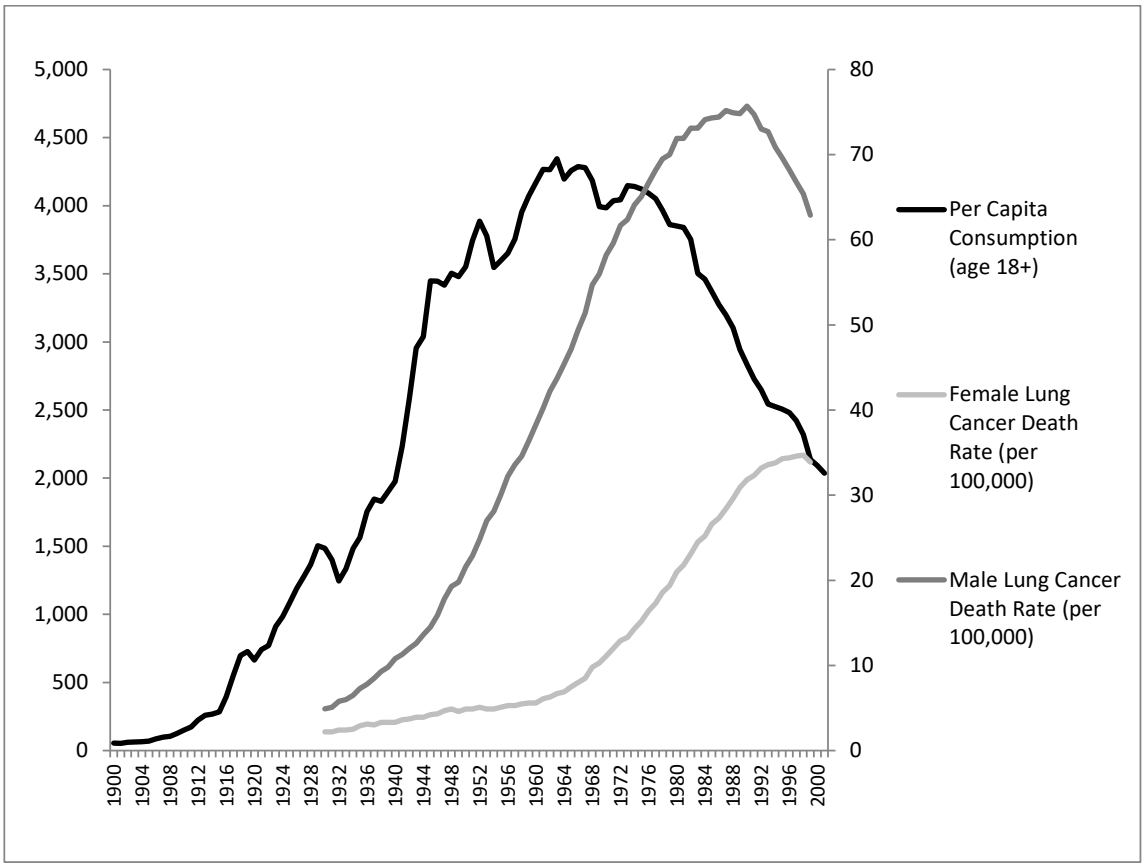
Source: Centers for Disease Control and Prevention

Figure 2. Annual Per Capita Cigarette Consumption (18+) and Domestic Production, U.S., 1900-2004



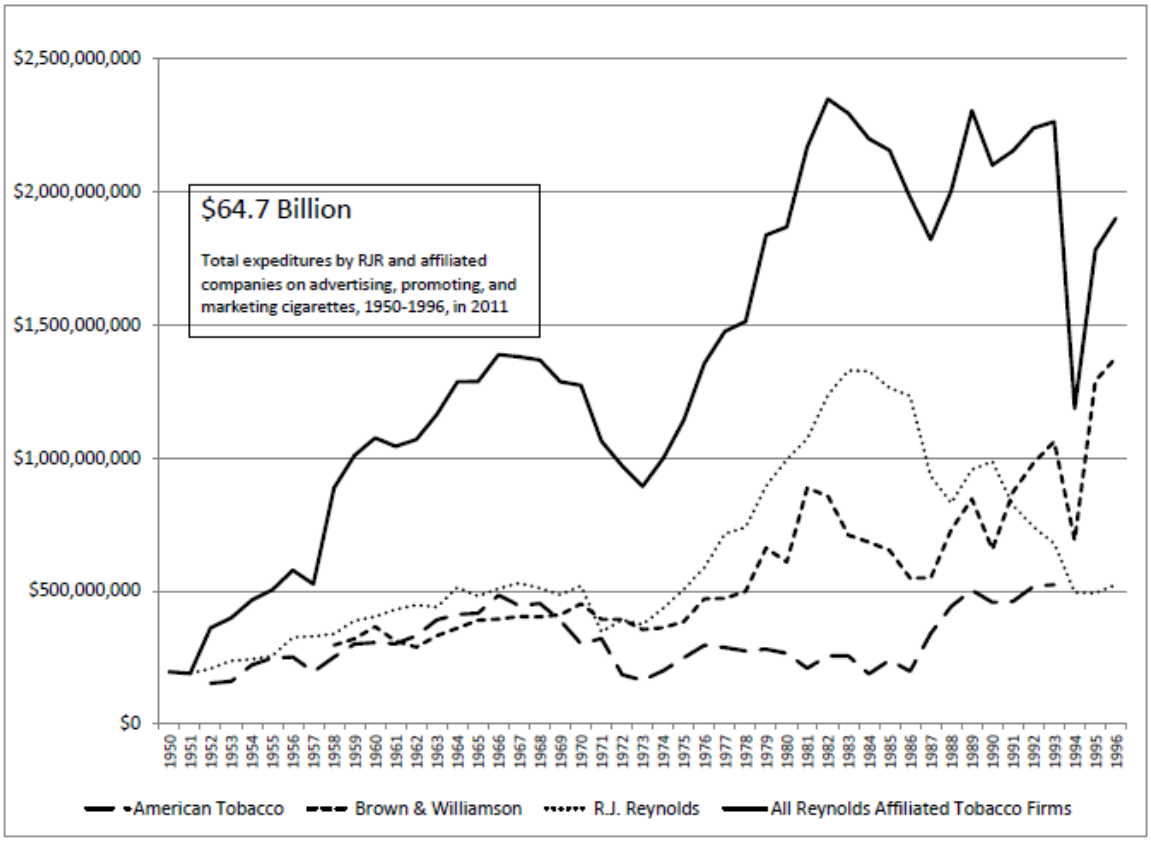
Source: Centers for Disease Control and Prevention

Figure 3. Annual Per Capita Cigarette Consumption and Lung Cancer Death Rate



Source: Centers for Disease Control and Prevention

Figure 4. Annual Advertising Expenditures: R.J. Reynolds, American Tobacco, and Brown & Williamson, 1950-1996 (in 2011 Dollars)



Source: R.J. Reynolds Tobacco Co., Response of Defendant R.J. Reynolds Tobacco Company To Plaintiffs' Interrogatories

Figure 5. Representative Cigarette Advertisements

Source: Chicago Tribune (April 12, 1954), p. 12F

6 - Section 1d CHICAGO TRIBUNE, FRIDAY, DECEMBER 16, 1966

BASKIN

TUNDRA BOOTS

The boot that belongs in every man's winter wardrobe. Guaranteed 100% waterproof, scuff, salt and stain resistant. Rugged! And warm: this boot's lining is extra thick to completely block out cold. Then a coating of special formula rubber is applied to soft uppers. These boots stay soft, don't absorb the wet of slush and snow. Here's old-fashioned protection with modern lightweight comfort. Black. **9.95**

Call AN 3-1000 to order or use this coupon

BASKIN, State at Adams, Chicago, Illinois 60603
Please send the following Tundra Boots @ 9.95:

REGULAR SHOE SIZE	QUANTITY

☐ Charge ☐ Check or Money Order ☐ C.O.D.

Name_____
Address_____
City_____ State_____ Zip_____
Illinois residents please add 4% for Retailer's Occupational Tax. Please add 50¢ for C.O.D. delivery.

STATE AT ADAMS • EVANSTON • OLD ORCHARD • OAK PARK
OAKBROOK • NAPERVILLE • EVERGREEN • CHAMPAIGN
RIVER OAKS • URBANA • HIGHLAND PARK

Wherever in the world you want to go, start your trip by using the travel section in Sunday's Chicago Tribune.

Living Faith

by Harold Blake Walker

ERNEST HOCKING, when he was professor of philosophy at Harvard university, wisely noted that work and worship are two sides of a single coin, for without worship that keeps life in perspective, our jobs too often become merely centers of a mad scramble for status and success. They become, not what we live to do, but a means to prestige, which is quite another thing.

* * *

When we live for the joy of working, making whatever contribution we are able to the good society, we lose the sense of frustration that often comes when our dreams of promotion are denied. We are not forever looking out primarily for ourselves. We see ourselves, rather, as part of something more important than ourselves.

When Walt Whitman was working on his book, "Leaves of Grass," someone asked him, "Walt, suppose your book went up in smoke, would you consider your life a failure?" "Not a bit of it," Whitman replied. "No life is a failure. I have done the work; I have thrown my life into the work . . . my simple life: putting it up far what it is worth: into the book—pouring it into the book: honestly, without stint, giving the book all, all, all: why should I call it a failure? Why? I don't think a man can be so easily wrecked as that."

* * *

A man can't be wrecked even if his hopes go up in smoke, not if he lives to work and finds joy in making some genuine contribution to the sum total of things. The finished book, the promotion, the prestige, the material gain, all these are but by-products of something far more ultimate: namely, the inward fulfillment of excellence as dedicated servants of God.

Make us restless and unsatisfied, O God, until we plow the best of ourselves into the make that claim our strength of body or mind. Amen.

A booklet of "Thirty Selected Sermons" by Dr. Harold Blake Walker, author of Living Faith, is on sale at the Tribune Public Service Office, 33 W. Madison st. The booklet sells for 50 cents over the counter or for 60 cents by postpaid mail.

PROFESSOR TO BE CITED

Robert Burns Woodward, Donner professor of science at Harvard university, has been selected to receive the 1967 Willard Gibbs medal award from the Chicago section of the American Chemical society, it was announced yesterday.

The award, one of the highest honors in chemistry, is being given to Woodward for his outstanding contribution to the organic chemistry of natural products, beginning with the total synthesis of quinine in 1944, said Dr. Charles K. Hunt, professor of chemistry at the Chicago Circle campus and chairman of the Chicago section of the chemical society.

The 1965 winner of the Gibbs medal, Dr. R. S. Mulliken of the University of Chicago, received the Nobel prize in chemistry last week in Stockholm. Woodward will receive the medal at a dinner on May 19, 1967.

STORY OF CHRISTMAS 1966
Read this fascinating account of the Christ Child in the Tribune Sunday Magazine in the Dec. 18th Cruise Tribune Sunday Magazine.

Cary Grant and Shirley Temple... the couple of the year?

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CHT-105

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CHT-105

Source: Chicago Tribune (December 16, 1966), p. 6B

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CHICAGO TRIBUNE, THURSDAY, JUNE 13, 1963

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RECOVER BOY'S BODY IN SWAMP IN WISCONSIN

Mountain, Wis., June 12 (AP)—Douglas Cedarblade, 7, was found dead today, lying face down in a swampy area of the Nicolet National forest.

Douglas, son of Dewey Cedarblade, directors of the Y. W. C. A. camp, Un-Nahya, had been the object of a search by about 100 persons in the densely wooded area since he was reported missing Tuesday night.

Guy Erb Jr., 16, of Suring, located the body about one mile from the camp. Officials arriving on the scene said the boy was lying in a small amount of water and appeared to be the victim of drowning or exposure.

Missing Child Found Dead in Wisconsin

(Story in adjoining column)

Volunteer searchers lined up along a road at Chute lake in Oconto county, Wis., to hunt for Douglas Cedarblade, 7, missing from camp operated by his father. Boy's body was found later in a swamp. (AP Wirephoto)

HINT RUSSIA WILL LAUNCH SPACE WOMAN

MOSCOW, June 12 (AP)—Rumors persisted today that Russian authorities may soon launch a woman cosmonaut into space.

One rumor had it that she is 23, but not especially pretty. She was allegedly chosen because she got thru her training course with better grades than her male companions.

There was no official confirmation, but one fact added a bit of plausibility to the rumors. Hundreds of women from all parts of the globe soon will be gathering here for the communist-run world women's congress, which opens June 24. It is possible the Kremlin has decided this is the time to impress the women with the launching of a space woman.

4 FLEE WAUPUN STATE PRISON IN WISCONSIN

Madison, Wis., June 12 (AP)—Warden John Burke of the state prison in Waupun reported that four prisoners were missing last night.

He identified one as Aubrey G. Nichols, 39, sentenced for forgery, and said Nichols fled while on chauffeur duty in Madison.

The other men fled while working in a prison warehouse outside Waupun. Burke identified them as Robert S. Albasini, 38, sentenced for forgery; Earl W. Jackson, 28, sentenced for burglary, and Pete Decorah, 27, sentenced for second degree murder, assault with intent to commit bodily harm, and burglary.

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Source: Chicago Tribune (June 13, 1963), p. 2B-12.

Louis M. Kyriakoudes, Ph.D.

Louis M. Kyriakoudes, Ph.D. Date: February 9, 2022

DECLARATION OF JOHN RUCKDESCHEL, M.D.

I, John Ruckdeschel, M.D., declare as follows:

1. My name is John Ruckdeschel. My address is 7 Tucker Court, Laurel Springs, NJ 08021.
2. I am a Chief Medical Officer for two tech firms where my work requires me to remain up to date in the management of diseases such as cancer. Prior to that, I was a practicing oncologist for 45 years, and I have served as director or chair of various cancer institutes and programs.
3. I have reviewed the medical records, deposition testimony and interrogatory answers of Sandra Camacho.
4. It is my professional opinion within a reasonable degree of medical probability that the smoking of L&M, Marlboro and Basic brand cigarettes all substantially contributed to Sandra Camacho being diagnosed with laryngeal cancer.
5. The opinions rendered in my expert report (attached to this declaration) represent my opinions, all held to a reasonable degree of medical certainty, and are based on a reasonable medical probability and scientifically reliable evidence.
6. I reserve the right to amend my opinions if further information is provided in any form.

Pursuant to NRS 199.120, under penalty of perjury, I declare that I have read the foregoing document and that the facts stated in it are true.

Dated: June 6, 2022.

John C. Ruckdeschel, MD, FACP, FCCC

Summary Report: 01-28-2022
Re: Sandra Camacho v Phillip Morris
Consultant: John C. Ruckdeschel, MD, FACP, FCCC

To whom it may concern:

I currently serve as the Chief Medical Officer of two tech firms, MetiStream, Inc and Real Time Medical Spectroscopy (RTMS). RTMS is in the process of developing a new methodology to detect diseases, including lung cancer, at an earlier date using breath analysis. I am responsible for designing and overseeing the clinical trials for this device. At MetiStream we are focused on cancer and are involved in using Natural Language Processing to identify patients for screening or clinical trials and following them over time for response, toxicity and survival. Both positions require me to be up to date in the management of cancer, among other disorders. I am retired from the active practice of oncology as of 9/1/20 after 45 years. I remain an Adjunct faculty member at the University of Mississippi.

I most recently served as the Director of the University of Mississippi Cancer Institute, the Ergon Chair in Cancer Research, Professor of Medicine in the School of Medicine and Professor of Population Health Science in the John D. Bower School of Population Health in Jackson, Mississippi. My previous positions include : Director, Oncology Clinical Program, Intermountain Health Care, Salt Lake City, Utah; Professor of Medicine, University of Utah, Salt Lake City ,UT, Professor of Medicine , University of Nevada School of Medicine; Chief Executive Officer and Director, Nevada Cancer Institute, Las Vegas, NV; President and Chief Executive Office, Barbara Ann Karmanos Cancer Institute; Associate Dean, Cancer Affairs, Wayne State University School of Medicine; Professor of Medicine and Oncology, Wayne State University School of Medicine; Senior VP - Cancer, The Detroit Medical Center, Detroit, MI. Professor of Oncology and Medicine , University of South Florida College of Medicine ; Director and Chief Executive Officer, H. Lee Moffitt Cancer Center, Tampa, FL; and President, Florida Division of the American Cancer Society; Professor of Medicine at Albany Medical College and Director of the Joint Center for Cancer and Blood Disorders.

I served in leadership positions in the Lung Cancer Study Group and the Eastern Cooperative Oncology Group. I chaired or co-chaired nearly 100 clinical trials in cancer. Most recently. I was awarded the St. George Medal from the American Cancer Society for Lifetime Achievement.

I graduated from Rensselaer Polytechnic Institute, Troy, NY with a Bachelor of Science in Biology in 1967. I attended and graduated from Albany Medical College, Albany, NY in 1971. My internship was at Johns Hopkins in Baltimore, MD and my residency at Beth Israel Hospital in Boston, MA. My fellowship in medical oncology was completed at the National Cancer Institute's Baltimore Cancer Research Center

in Baltimore, MD. I am board certified in Internal Medicine and Medical Oncology. I am currently licensed to practice in New Jersey.

I have received various grants over the years and have conducted research on many aspects of cancer. I have authored or co-authored over 144 peer-reviewed publications and multiple invited presentations, abstracts and book chapters. While many of these discuss issues related to lung cancer, I have also published extensively on cancer-related pain, patient-physician communication, complications of cancer therapy, quality of life, malignant pleural effusions, spinal cord compression and the economics of cancer care. A copy of my Curriculum Vitae, which more fully sets forth my qualifications, is attached hereto as Exhibit "A".

I have diagnosed and treated thousands of patients with cancer, primarily lung and other thoracic malignancies, but during several intervals I saw general oncology patients including a number with head and neck cancer. Many patients develop both lung and laryngeal cancers over time, and I have treated dozens of such patients. Head and neck cancers are part of a group of cancers known as aerodigestive cancers that share similar etiologies, therapies and complications of therapy. Through my education, training, and experience, I am very familiar with how cancer develops generally, how cancer develops in the lung and aerodigestive tract, the causes of cancer of the aerodigestive tract, the association between cigarette smoking and aerodigestive cancer and the way carcinogens in smoke cause cancer. Through my education, training, and experience, I am very familiar with the way cancers behave in the body, patterns of metastases, treatment modalities and the way cancers are diagnosed both pathologically and clinically.

I have been provided with the following records:

1. Multiple records from Comprehensive Cancer Centers of Nevada pertaining both to her original referral for polycythemia vera and her later referral for management of laryngeal cancer.
2. Ronald Reagan UCLA Medical Center
3. Multiple records from St. Rose Dominican Hospitals
4. Intermountain Healthcare
5. Sunrise Hospital
6. Aurora Diagnostics
7. Quest Diagnostics
8. Desert Radiology
9. Steinberg Diagnostics
10. Physician practices of:
    a. Dr. Weingarten
    b. Wikler Family Practice
    c. Dignity Medical group
    d. Women's Health
    e. Digestive Disease Specialists
    f. Pulmonary Associates
    g. Heart Center of Nevada

h. Healthcare Partners
i. Urology Specialists
j. Dr. Moxley
k. Touro University
l. Aloha Clinic

11. Various Homecare agencies
    a. Valley Home Health
    b. UR First LLC
    c. Preferred Homecare
12. Fact Depositions/Interrogatories.
    a. Sandra Camacho 1/2/21, 1/3/21,2/7/21 and2/7/21
    b. Anthony Camacho 1/4/21 and 2/7/21
    c. Initial, first revision and second revision interrogatories.
13. Unrelated practices
    a. Podiatry
    b. Ophthalmology
    c. Various pharmacies

I have reviewed all the available records and depositions that were provided.

The medical records document a heavy cigarette smoking history for Mrs. Camacho. While in this report I have not set forth all the many references in her medical records to her smoking, I have reviewed them and different medical records at different times reflect minor differences in her smoking history as is often seen in clinic records. However, they, consistently reflect the fact that Sandra Camacho was a regular and heavy cigarette smoker with at least a 50-pack year smoking history. Her predominant brands were L&M, Marlboro and Basic. There were several notes confirming she had no history of alcohol abuse.

Regarding her laryngeal cancer, the following information was gleaned from the medical records. Note that I have not set forth in detail in this report all medical records that I may discuss or reference in respect to her laryngeal cancer, its treatment, and its clinical course. I have endeavored herein to provide a summary of diagnosis and treatment and may, at trial, discuss in greater detail these records and other medical records that I have reviewed. Her medical history was complicated by several conditions, both related and unrelated to her smoking history, that will not be discussed further unless they impacted on her treatment and outcome:

1. Vitamin D deficiency
2. Morbid Obesity
3. Polycythemia vera
4. Paroxysmal atrial fibrillation
5. Colon polyps
6. Chronic Obstructive Pulmonary Disease (COPD)
7. Gastrointestinal Reflux (GERD)

8. Microscopic hematuria
9. Coronary artery disease
10. Diabetes mellitus
11. Hypothyroidism

Her laryngeal problems were as follows:

1. On 12/17/15 the patient saw Dr. Atkinson at Dignity Medical Group for loss of voice and failure to respond to standard conservative treatment. A smoking history of 50 pack years was noted starting at age 18. A CT exam of the sinuses was ordered, and she was referred to ENT. There is neither a record of a CT of the sinuses nor a visit with an ENT specialist.
2. On 11/21/16 she saw Dr. Malik at Health Care Partners for evaluation of possible polycythemia vera. No note was made of hoarseness or sore throat.
3. On 7/5/17 she saw Dr. Weingarten for hoarseness with bilateral vocal cord leukoplakia. A micro direct laryngoscopic biopsy showed inflammation and mild dysplasia on the right and moderate dysplasia on the left vocal cord. He then referred her to Dr. Burke at UCLA for a micro direct laryngoscopy with CO_2 laser ablation.
4. On 9/19/17 she had a micro direct laryngoscopy with CO_2 ablation and stripping. All biopsies at UCLA were negative for cancer, showing only dysplasia.
5. On 12/29/17 she saw Dr. Weingarten with worsening symptoms and a return to UCLA and Dr. Burke was recommended.
6. Dr. Malik's notes at Health Care Partners disclosed that she went to a University Medical Center (UMC) in Las Vegas on 3/16/18 with respiratory distress and was found to have an obstructing mass requiring an emergency tracheotomy and urgent transfer to UCLA. Biopsy showed squamous cell carcinoma. This was confirmed in the UCLA notes, but I did not receive any records from UMC.
7. On 3/16/18 she was found to have an obstructing, bilateral glottic mass that required a total laryngectomy. There was an invasive keratinizing squamous cell carcinoma, moderate to poorly differentiated, and 4 cm in size with a depth of invasion of 1.5 cm. There was trans glottic involvement and invasion of the left thyroid cartilage. All lymph nodes were negative for cancer, and she was staged as stage III (T3N0M0).
8. On 5/3/18 she saw a radiotherapist, Dr. Pomerantz, in Las Vegas who gave her the potential risks and benefits of post-operative radiation therapy with well documented notes concerning potential complications. She ultimately opted not to have the radiation, despite recommendations from several of her physicians.
9. She underwent several problems related to her trach but otherwise did well with no evidence of recurrence until July of 2019 when she developed a mass in her right neck, which biopsy disclosed as recurrent squamous cell cancer.
10. She was seen at Comprehensive Cancer Centers of Nevada (CCCN) and informed

that she would need combination chemotherapy and radiation. In preparation for this she saw a dentist for full mouth extractions and had a PEG tube placed, both required when the head and neck area is being radiated. She was begun on weekly carboplatin and radiation therapy with the usual significant complications of therapy.

11. On follow-up at CCCN on 1/13/20 she had no clinical evidence of recurrence, but CT showed what was considered a possible recurrence or scarring. A PET scan done on 3/9/20 showed no evidence of recurrence and she has had no evidence of recurrence since then.
12. On 2/4/21 at the time of her deposition she was still in remission from the cancer, but continued to suffer the sequalae of the surgery, radiation and chemotherapy. Her current symptoms (as of 2/21) included:
    a. Inability to talk
    b. Scarring of the neck
    c. Inability to eat solid foods
    d. Shortness of breath with chronic oxygen required
    e. Frequent need for tracheal suctioning
    f. Frequent cleaning of stoma
    g. Some intermittent loss of focus
    h. Extremely limited ability to shop or go anywhere.
    i. Depression

My opinions are based on Mrs. Camacho's medical records, the fact depositions, my education, training, experience, general medical knowledge and the scientific literature. I hold the following opinions in this case to a reasonable degree of medical certainty.

1. Sandra Camacho has primary laryngeal carcinoma, specifically squamous cell carcinoma of the larynx. Her primary carcinoma of the larynx was caused by her smoking of cigarettes. She had no history of alcohol abuse nor was mention made of human papilloma virus (HPV) infection

2. The major brands that she smoked were L&M, Marlboros and Basic and she was reported to have a 50-pack year exposure. All of these cigarettes contributed to the development of her cancer.

3. Her cancer was first diagnosed in March of 2018 despite earlier evaluations at her local hospital in Las Vegas and at UCLA. It was stage III (T3N0M0) and was obstructing her airway.

4. There is little or no difference in outcome when T3N0M0 glottic tumors are treated initially with surgery alone, radiation alone or with combined modality therapy. While immediate post-operative radiation is a standard recommendation there is no evidence that radiation delivered to a recurrent lymph node is any less effective than when the radiation is given post-operatively. Consequently, her refusal to accept post-operative radiation did not substantively change her stage or prognosis.

5. The clinical and social impact of a total laryngectomy can be severe, and Mrs. Camacho has had virtually all the common complications. Her husband is significantly impacted by her illness and their entire life now revolves around the care of her airway.

John C. Ruckdeschel, MD, FACP, FCCC

3/14/22
Date