

## RESEARCH PAPER

# Consumer acceptable risk: how cigarette companies have responded to accusations that their products are defective

K Michael Cummings, Anthony Brown, Clifford E Douglas

*Tobacco Control* 2006;15(Suppl IV):iv84–iv89. doi: 10.1136/tc.2004.009837

See end of article for authors' affiliations

Correspondence to:  
K Michael Cummings,  
PhD, MPH, Department of  
Health Behavior, Division  
of Cancer Prevention and  
Population Sciences,  
Roswell Park Cancer  
Institute, Elm and Carlton  
Streets, Buffalo, NY  
14263, USA; michael.  
cummings@roswellpark.  
org

Received 24 August 2004  
Accepted 23 February  
2005

**Objective:** To describe arguments used by cigarette companies to defend themselves against charges that their cigarettes were defective and that they could and should have done more to make cigarettes less hazardous.

**Methods:** The data for this paper come from the opening statements made by defendants in four court cases: two class action lawsuits (Engle 1999, and Blankenship 2001) and two individual cases (Boeken 2001, and Schwarz 2002). The transcripts of opening statements were reviewed and statements about product defect claims, product testing, and safe cigarette research were excerpted and coded.

**Results:** Responses by cigarette companies to charges that their products were defective has been presented consistently across different cases and by different companies. Essentially the arguments made by cigarette companies boil down to three claims: (1) smoking is risky, but nothing the companies have done has made cigarettes more dangerous than might otherwise be the case; (2) nothing the companies have done or said has kept someone from stopping smoking; and (3) the companies have spent lots of money to make the safest cigarette acceptable to the smoker.

**Conclusions:** Cigarette companies have argued that their products are inherently dangerous but not defective, and that they have worked hard to make their products safer by lowering the tar and nicotine content of cigarettes as recommended by members of the public health community. As a counter argument, plaintiff attorneys should focus on how cigarette design changes have actually made smoking more acceptable to smokers, thereby discouraging smoking cessation.

For plaintiffs, litigation against the cigarette industry offers the hope of providing monetary damages and restitution for past wrongful actions by these companies. For public health, litigation against cigarette companies holds the promise of forcing these companies to alter their products and marketing practices to prevent future violations of the law.<sup>1 2</sup>

One of the key areas of dispute in tobacco litigation today is whether cigarette companies manufactured and marketed products that the companies knew to be defective, and whether they could and should have taken more aggressive steps to market less hazardous products.<sup>3</sup> Product defect claims have typically focused on how cigarette companies designed their products to induce and maintain nicotine addiction, the use of additives that increased addiction and health risks, and misleading and fraudulent marketing claims especially those related to filters and low tar cigarettes.<sup>4–11</sup> Plaintiff attorneys have also typically sought to demonstrate that cigarette companies failed to make a reasonable, good faith effort to develop and market less harmful tobacco products and in fact may have deliberately conspired to suppress such efforts (the so-called Gentlemen's Agreement).<sup>12–14</sup>

Plaintiffs' product defect claims have been among the most difficult charges to prove to a jury, even with the millions of pages of internal tobacco industry documents now available to support charges of wrongful actions by cigarette companies. For example, in a recent class action lawsuit brought on behalf of smokers in Louisiana, the jury found that the tobacco companies had conspired to distort the truth about the dangers of smoking and marketing cigarettes to minors, but did not find that the companies had designed and marketed a defective product.<sup>15</sup>

This paper examines how cigarette companies have defended themselves in four recent court cases against

charges that their cigarettes were defective and argues that they could and should have done more to make cigarettes less hazardous.

## METHODS

The data for this paper come from the opening statements made by defendants in four recent court cases: two class action lawsuits (Engle 1999, and Blankenship 2001) and two individual litigant cases (Boeken 2001, and Schwarz 2002). The plaintiffs received positive jury verdicts for plaintiffs in three of the four cases (Engle, Boeken, and Schwarz). Those three positive verdicts have been appealed. Copies of the opening statements from each case were obtained from the Tobacco Deposition and Trial Testimony Archive which is available online at: <http://tobaccodocuments.org/datta/>.<sup>16–20</sup>

We chose to review the Engle and Blankenship cases because both were class action lawsuits that involved all of the major cigarette companies (Philip Morris, RJ Reynolds, Lorillard, Brown and Williamson, Liggett Group) and their affiliated research and trade organisations (Council for Tobacco Research, Tobacco Institute). The Engle case is historic because it represented the longest jury trial in US legal history (nearly two years) and resulted in a \$145 billion dollar jury verdict against the tobacco industry. In contrast, the Blankenship case resulted in a jury verdict for the tobacco industry. The Blankenship trial took place two years after the Engle verdict, which we thought might alter the arguments used by defendants in the case. Thus, we were interested in contrasting the opening statements in the two cases. The two individual cases we chose to review were both against Philip Morris. The Schwarz case involved a plaintiff who smoked a low tar cigarette brand (Merit), while the plaintiff in the Boeken case smoked a full flavoured cigarette (Marlboro). In selecting these two cases we were interested to see if differences in the cigarette brand smoked by plaintiffs would

alter how Philip Morris might seek to counter charges about product defect and safe cigarette research.

The transcripts of opening statements included 427 pages of material. Each transcript was reviewed by one of the authors (KMC) and statements about product defect claims, product testing, and safe cigarette research were excerpted into a separate smaller document. Excerpted statements from each case were subsequently coded into the following eight subject categories: (1) safe cigarettes and defective products; (2) nicotine control/manipulation; (3) nicotine addiction; (4) consumer awareness of nicotine addiction and product risks; (5) safe cigarette research; (6) industry partnership with the public health community; (7) consumer acceptability; and (8) product testing. The first four subject categories relate to plaintiffs charges regarding the marketing of defective cigarettes, while the latter four coding categories relate to plaintiffs contention that the defendants failed to develop and market less hazardous cigarettes.

The coded, selected excerpted statements were shared with the other two authors (AB, CD) who then reviewed the original full transcript of each opening statement to ensure that the excerpted material was accurate and fairly reflected the statements made by defendants about product defect claims, product testing, and safe cigarette research. Any inconsistencies in coding of statements missed in the initial review were discussed among the three authors so that the material presented in this paper is based on the consensus of the three people who independently reviewed each transcript.

## RESULTS

Table 1 displays the arguments made by defendants in their opening statements in each of the four cases on the following four topics that relate to cigarette companies alleged marketing of defective products: (1) safe cigarettes and defective products; (2) control and manipulation of nicotine in cigarettes; (3) nicotine addiction; and (4) consumer awareness of nicotine addiction and product related health risks. As is evident in table 1, the arguments made by defendants were consistent across all four cases and, in the two class action lawsuits, were consistent between the different tobacco companies. In each case, the defendants acknowledged that there was no such thing as a safe cigarette, but argued that while cigarettes were an inherently dangerous product there was nothing in the design of cigarettes that make them even more dangerous than they might otherwise be. For example, in opening arguments in the Blankenship case jurors were told, "Just because a product is risky does not make it defective. In our society there are lots of risky products that are not defective. Guns can shoot you, knives can cut you, and we all unfortunately know what eating too much fatty food can do to you. But that doesn't make those products defective. Those are inherent risks of those products."<sup>18</sup>

Defendants argued that cigarettes were designed for taste, not nicotine delivery. Variation in nicotine delivery between products or within the same brand over time was attributed to efforts made to satisfy consumers' demand for lower tar cigarettes that taste good. As an illustration of these arguments, jurors in the Engle case were told, "...blending tobacco is an art; it's not nicotine driven science...the tar deliveries are a result of blend...nicotine follows tar...companies blend for taste because that's what smokers want."<sup>19 20</sup> On the question of nicotine addiction, the defendants argued that while nicotine was an important factor in smoking behaviour, there was nothing done to cigarettes that would prevent someone from quitting. In the Engle case jurors were told, "...there is more to smoking than just nicotine...46 million people have quit smoking...most by simply deciding to quit."<sup>19 20</sup>

In each case the defendants argued that the plaintiffs knew in advance that quitting smoking could be difficult and that the inherent health risks of cigarette smoking were well known, therefore there could be no fraud. In the Schwarz case, the plaintiff had started smoking when she was 18 years old. In opening arguments jurors were told, "She started smoking as an 18 year old. She knew it was dangerous."

Table 2 displays arguments made by defendants in each of the four cases on the following three topics: (1) research undertaken by cigarette companies to develop less hazardous cigarettes; (2) cooperation between cigarette companies and members of the public health community to develop a less hazardous cigarette; and (3) efforts made by cigarette companies to develop a safer cigarette. As illustrated in table 2, the arguments presented on these subjects, all of which pertain to the alleged failure by cigarette companies to develop and market less hazardous cigarettes, were generally consistent across all four cases and between different companies. In each case the defendants emphasised in their opening statements the amount of money that had been expended on research to develop less hazardous cigarettes. In the Engle case, jurors were told, "...many resources were devoted to developing safer cigarettes with lower tar and nicotine levels."<sup>19 20</sup> The defendants described research on cigarette design as being complex and highly technical. In each case, the defendants used a chart illustrating the reduction in machine measured tar levels of cigarettes that occurred between the mid 1950s and late 1990s. The defendants provided a detailed chronology and description of specific design alterations introduced by cigarette companies with the implication that these design modification contributed to a reduction in the inherent risks of smoking by lowering tar levels. In the Engle case jurors were told, "...incredible success was achieved in lowering tar and nicotine... Dr. Wynder believed when all this began that a 40% reduction in tar would be significant...the reduction in tar doesn't represent 40%...it represents almost 70%."<sup>19 20</sup>

In each case, the defendants referred to the National Cancer Institute's Tobacco Working Group as a partnership between the federal government and the tobacco industry to develop a safer cigarette. For example, in the Engle case, jurors were told, "They [cigarette companies] went about trying to remove or lower some of the components or compounds in smoke. Initially on their own, then came a period of time when they did it in a partnership. You may be surprised to learn that this partnership was with the United States Government. It was called the TWG or Tobacco Working Group...the goal of the TWG was to pursue all efforts to create a safer cigarette."<sup>19 20</sup>

In each case defence attorneys told jurors that additives used in cigarettes were common to other foods, were divulged to the federal government, and were routinely tested and found to be safe. For example, in the Schwarz case jurors were told, "All of their ingredients have been disclosed to the government...the federal government has never requested removal of any ingredient in Philip Morris cigarettes."<sup>17</sup>

A common theme in each case was the idea that in order to have a safer cigarette it must be acceptable to a large number of consumers. For example, in the Engle case jurors were told, "It's very important that we develop a low tar product that will have large acceptance by a vast majority of the people who smoke. Because if you develop a low tar product...where only 1 or 2 percent of smokers will use, you really haven't done much."<sup>19 20</sup>

## DISCUSSION

The findings from this study reveal that cigarette companies' counter arguments to charges that their products were

**Table 1** Responses to charges about marketing defective cigarettes

| Subject category      | Case  | Quotes from transcript   |
|-----------------------|---|--|
| Defective products    | Boeken <sup>16</sup><br>Blankenship <sup>18</sup> | <p>"Smoking is dangerous. People who smoke are taking a risk. There is no such thing as a safe cigarette."<br/>           "Cigarettes are inherently dangerous, but not defective."<br/>           "Just because a product is risky does not make it defective. In our society there are lots of risky products that are not defective. Guns can shoot you, knives can cut you, and we all unfortunately know what eating too much fatty food can do to you. But that doesn't make those products defective. Those are inherent risks of those products."<br/>           "...unfortunately the inherent risks of cigarettes are that you smoke them, you will develop increased risks of developing lung cancer and emphysema. But that is a natural inherent consequence of using the product. It has nothing to do with anything that the cigarette manufacturers do."</p> |
| Nicotine manipulation | Schwarz <sup>17</sup><br>Engle <sup>19, 20</sup>  | <p>"Nicotine is something that is in tobacco. It [nicotine] is not something that's added to tobacco."<br/>           "Nature put nicotine in the tobacco plant... just like caffeine is a natural part of the coffee bean."<br/>           "...blending tobacco is an art; it's not a nicotine driven science. It is more like the work of, for lack of a better example, a wine maker or someone who makes cigars who are doing it for taste."<br/>           "...the tar deliveries are a result of blend. The tobacco companies blend first for taste and second for tar. There is no effort to blend for nicotine. Nicotine follows tar. The companies blend for taste because that's what smokers want."</p>   |
| Nicotine addiction    | Engle <sup>19, 20</sup>                           | <p>"...there is nothing about smoking that keeps a person from quitting."<br/>           "...there is more to smoking than just nicotine...46 million people have quit smoking. Most by simply deciding to quit."</p>  |
|                       | Boeken <sup>16</sup>                              | <p>"Is smoking addictive? Yes. But even addicted smokers can quit. They do it all the time...nothing Philip Morris said or did take away from Mr. Boeken's freedom to quit smoking."</p>   |
|                       | Schwarz <sup>17</sup>                             | <p>"There is no evidence, none whatsoever that if Philip Morris had not come up with Merit cigarettes that she would have quit - none."<br/>           "Ammonia is naturally occurring in tobacco...so you're not adding anything to it that isn't already there. Ammonia adds quality and flavor...smokers may like their smoke more because of ammonia in it, but that's not spiking cigarettes with nicotine."</p>  |
| Consumer awareness    | Engle <sup>19, 20</sup>                           | <p>"There is no question that smoking involves risks. But of all the consumer products manufactured and sold in the United States over the last century, none have had risks that have been better understood and better appreciated by consumers than that of the health risks of smoking. None."<br/>           "...there was no fraud. You can't defraud somebody by hiding from them something they already know about. People who made the choice to smoke over the course of years knew these health risks and well knew that smoking can be hard to stop once you start."</p>   |
|                       | Blankenship <sup>18</sup>                         | <p>"Your common sense tells you that everyone has known that smoking is bad for you, and they have known for a long time."<br/>           "...in 1604, King James wrote a counterblast to tobacco...in the early 1900's 16 states banned cigarettes...in 1938, Larry, Curly and Moe won the contest from the Coffin Nail Cigarette Company on Tobacco Row...in 1954, 90 percent of Americans say they've heard smoking causes lung cancer...the 64 Surgeon General's report comes out, bang cigarettes: tried and found guilty...in 1990 96 percent of Americans thought that cigarette smoking was harmful to health."</p>  |
|                       | Boeken <sup>16</sup>                              | <p>"Philip Morris and the other tobacco companies have said smoking is risky. But people didn't hear that because they still heard the tobacco companies not falling in line with the Surgeon General, not admitting flat out that smoking causes cancer."<br/>           "Did people smoke because of what the tobacco companies said? The answer is no. Look at what happened to the smoking rates over the years?"<br/>           "Philip Morris and the other tobacco companies did not help like they should have. But it is simply not true that they stopped the public health message from getting through."</p>   |
|                       | Schwarz <sup>17</sup>                             | <p>"She started smoking as an 18 year old. She knew it was dangerous."<br/>           "All of their ingredients have been disclosed to the government...the federal government has never requested removal of any ingredient in Philip Morris cigarettes."</p>   |

defective and that they should have done more to research and market less hazardous tobacco products have been presented consistently across different cases and by different companies. Essentially the arguments boiled down to three claims. First, smoking is risky, but nothing the cigarette companies have done has made cigarettes more dangerous than might otherwise be the case. Second, nothing the cigarette companies have done or said has kept anyone from stopping smoking. Third, cigarette companies have spent lots of money and have worked with the public health community to make the safest cigarette acceptable to the smoker.

After the verdict in the Engle case, in which one of us (CD) served as co-counsel for the plaintiffs, it does appear that Philip Morris has been increasingly willing to acknowledge some mistakes in how the company defended smoking in the face of mounting evidence about health risks and nicotine addiction. The companies' scorched earth approach to defending their actions, which characterised the legal strategy in the Engle case and all preceding cases, appears to have been softened in subsequent cases, perhaps as a strategy to defuse the impact of incriminating internal documents and the testimony of company whistleblowers. Whatever the reason for the change in legal strategy, in the

Blankenship, Boeken, and Schwarz cases, Philip Morris acknowledged that they had made some mistakes when it came to publicly admitting cigarettes caused disease and could be addictive.<sup>16-18</sup> For example, in the Boeken case the attorney for Philip Morris told the jury, "Looking back, these choices by Philip Morris and the tobacco companies were the wrong choices. They fell out of step. They fought too long. They were stubborn. They did a poor job of listening."<sup>16</sup> However, while admitting to some mistakes, attorneys representing cigarette companies argued that their actions had no impact on smokers since the risks of smoking were already well known to the public at large and the health message about smoking was still getting through to consumers as evidenced by declining smoking rates. This argument is illustrated in the opening statement in the Schwarz case, where the defence attorney instructed the jurors, "...there was no fraud. You can't defraud somebody by hiding from them something they already know about."<sup>17</sup>

We believe that there are a number of weaknesses in the arguments used by cigarette companies to defend themselves against the accusation that their products were and are defective. First, cigarette companies are susceptible to charges about how they have designed their products for nicotine

**Table 2** Responses to charges about researching and marketing safer cigarettes

| Subject category        | Case                           | Quotes from transcript  |  |
|-------------------------|--------------------------------|---|--|
| Safe cigarette research | Engle <sup>19,20</sup>         | <p>"...many resources were devoted to developing safer cigarettes with lower tar and nicotine delivery rates."<br/>                     "We think tar is a problem. They [public health] had a mouse skin painting test...that didn't prove anything, but it certainly alerted everyone that you need to investigate something...did the fact that the companies believe that meant cause and effect stop them from engaging in a massive undertaking to investigate their product and attempt to modify it? Absolutely not. They devoted tons and tons of resources, dollars to get it done, as well as manpower."<br/>                     "Filters were used; filters were improved. Porous paper was developed to reduce tar. Reconstitute tobacco was another step along the way in generally reducing tar. You had tip ventilation, which is the same theory as porous paper...we reduced the circumference of cigarettes... we puffed up tobacco... companies tried tobacco substitutes...peanut shells, lettuce, even petunias. Substitutes won't work, but they fired them."<br/>                     "The evidence will show that dramatic results were achieved by their efforts to modify their products."<br/>                     "Dr. Wynder believed when all this began that a 40% reduction of tar would be significant...incredible success was achieved in lowering tar and nicotine...the reduction in tar doesn't represent 40%...it represents almost 70%."<br/>                     "Next, Philip Morris spent over 300 million dollars coming up with this product. It failed in the market. Smokers didn't like it. I'll tell you about another one – an RJR product called Premier. It was a product that RJR thought was near perfect...however, the Surgeon General and other government officials dammed damned the product...they didn't want anybody smoking. Accord. Hundreds of millions of dollars have been spent by Philip Morris in developing it. It's another innovative product."<br/>                     "Can these companies call any of these products safe or safer? They cannot...there is no agreement on exactly what a safer cigarette is. The public health community hasn't reached that, and no one has ever come up with a firm definition, so they can't call it safer."</p> |  |
|                         | Blankenship <sup>18</sup>      | <p>"Cigarette design...it looks simple, a bunch of tobacco wrapped in paper stick a filter on the end, it looks simple. But it is incredibly complex..."<br/>                     "You could have spent all the money you wanted to back in 1954 [to design a safer cigarette], and you wouldn't have gotten there because the scientific building blocks had not yet grown."<br/>                     "There has never been a single important innovation with respect to the safety of cigarettes that these companies were not the first to identify and implement."</p>   |  |
|                         | Boeken <sup>16</sup>           | <p>"There's no safe cigarette...but you're not going to hear about any safer cigarette design that Philip Morris didn't pursue...you're not going to hear that there's any cigarette design out there that would have prevented Mr. Boeken from getting sick."</p>  |  |
|                         | Schwarz <sup>17</sup>          | <p>"And while they [Philip Morris] was mincing over definitions and denying {strike that} and focusing on what had not been proven with respect to lung cancer, they were doing everything they could to improve this product in terms of make it less hazardous on the assumption that it did cause cancer."</p>   |  |
|                         | Partnership with public health | Engle <sup>19,20</sup>  | <p>"...somebody else has said they believe these products [cigarettes] with lower tar and lower nicotine were better for public health. Guess who that is? That was no less than the United States public health community."<br/>                     "They [cigarette companies] went about trying to remove or lower some of the components or compounds in smoke. Initially on their own, then came a period of time when they did it in a partnership. You may be surprised to learn that this partnership was with the United States Government. It was called the TWG or Tobacco Working Group."<br/>                     "The Tobacco Working Group consisted of the tobacco companies best and brightest scientists and the US public health community, NIH, the NCI – National Cancer Institute. It was the smoking and health program of the NCI that the TWG reported to and advised. American Cancer Society was a member. Many eminent professors from universities throughout the country and famous scientists, including the very famous Drs. Wynder and Hoffman."<br/>                     "The goal of the TWG was to pursue all efforts to create a safer cigarette. The TWG concluded that the best way to attack this problem, the problem of lowering tar, was to attack it by a technique called general reduction...a technique whereby you generally reduce all of the components in smoke. Selective reduction just didn't work."<br/>                     "...reducing the amount of tars that reach the smoker is a good thing to do...less of the bad stuff gets to the smoker...not Philip Morris' idea. The idea of the scientific community back in the 1950's...and that's what Philip Morris and the other tobacco companies did."</p> |
|                         |                                | Boeken <sup>16</sup>  | <p>"Philip Morris is doing everything it can to work with the public health community to try to make a better, a less addictive cigarette."</p>  |
| Schwarz <sup>17</sup>   |                                | <p>"It's very important that we develop a low tar product that will have large acceptance by a vast majority of the people who smoke. Because, if you develop a low tar product, and these are basically Dr. Wynder's words, where only 1 or 2 percent of smokers will use, you really haven't done much."</p>  |  |
| Consumer acceptability  | Engle <sup>19,20</sup>         | <p>"It's complex because in order to make a cigarette with low tar and low nicotine, a lot has to go into achieve that. Because if you just took tobacco and put it in and rolled it up, you would have a cigarette with substantially, higher tar and nicotine. The other thing is you'd probably have a cigarette that tasted so harsh that very few people would want to buy that product."<br/>                     "...we make the safest cigarette that is acceptable to the smoker."<br/>                     "If a cigarette doesn't taste good to smokers, they won't trade for it, regardless of what the safety benefits might be of it."<br/>                     "Nobody knows how to make a commercially acceptable safe cigarette...they have been able to greatly reduce cancer causing and other chemicals in cigarettes, but they haven't come up with one that tastes good yet."</p>   |  |
|                         | Blankenship <sup>18</sup>      | <p>"These companies test the heck out of their products...they test virtually every aspect of the product. They test every component of the process of manufacturing cigarettes...they test the biomedical consequences of using those products... RJR evaluates every single change it makes in cigarettes to make sure that nothing it does increases the inherent risk that's a natural result of smoking cigarettes."</p>   |  |
| Product testing         | Blankenship <sup>18</sup>      | <p>"...many of the compounds that are in smoke that are found in many things, many foods, that all of us are exposed to every day such as tomatoes, potatoes, beer, fish, milk, cheese, spinach...there are a lot of things in there that are not unique to cigarette smoke."<br/>                     "The Department of Health and Human Services of the Federal Government is charged with responsibility to assess the safety of the reported ingredients...the government has never determined that any of the ingredients reported by the companies are unsafe."<br/>                     "These companies have and continue to pursue product changes and new product ideas. They haven't slacked off one bit since this process began in the early '50s. The scientific tests of the day were being utilized by these companies."<br/>                     "The point is that the hazards of cigarette smoke are in the burning tobacco – ingredients don't matter. They don't increase the hazards. They don't decrease the hazards."<br/>                     "Philip Morris has tested its ingredients...we tested them as inhaled substances, and there is no indication that those ingredients increase the hazardous nature of cigarette smoke."<br/>                     "All of their ingredients have been disclosed to the government...the federal government has never requested removal of any ingredient in Philip Morris cigarettes."</p>  |  |
|                         | Engle <sup>19,20</sup>         | <p>"The point is that the hazards of cigarette smoke are in the burning tobacco – ingredients don't matter. They don't increase the hazards. They don't decrease the hazards."<br/>                     "Philip Morris has tested its ingredients...we tested them as inhaled substances, and there is no indication that those ingredients increase the hazardous nature of cigarette smoke."<br/>                     "All of their ingredients have been disclosed to the government...the federal government has never requested removal of any ingredient in Philip Morris cigarettes."</p>  |  |
|                         | Schwarz <sup>17</sup>          | <p>"The point is that the hazards of cigarette smoke are in the burning tobacco – ingredients don't matter. They don't increase the hazards. They don't decrease the hazards."<br/>                     "Philip Morris has tested its ingredients...we tested them as inhaled substances, and there is no indication that those ingredients increase the hazardous nature of cigarette smoke."<br/>                     "All of their ingredients have been disclosed to the government...the federal government has never requested removal of any ingredient in Philip Morris cigarettes."</p>  |  |

delivery, not just taste. Studies are just now emerging in the scientific literature that speak to the question of how different cigarette design features, including additives, influence nicotine delivery.<sup>4-7 21-24</sup> The safety of additives is also now beginning to be questioned more directly.<sup>24-26</sup> For example, a recent paper by Stanfill and Ashley<sup>25</sup> reported on potential carcinogens generated by burning chemical additives used in commercial cigarettes.

In the courtroom, defendants have argued that product additives are only a concern if they are found to add to the already toxic nature of cigarette smoke. For example, in the Schwarz case jurors were told, "The point is that the hazards of cigarette smoke are in the burning tobacco-ingredients don't matter. They don't increase the hazards. They don't decrease the hazards."<sup>17</sup> However, this argument neglects to consider that an additive does not need to necessarily contribute to the toxicity of cigarette smoke to make smoking more dangerous. Flavourings like menthol which are added in part to make cigarettes taste a certain way,<sup>24</sup> chemicals (like ammonia) which are added again, at least in part to make smoke less harsh to inhale,<sup>22 23</sup> and design alternations like filter vents intended to make it easier to draw the smoke through the tobacco column all contribute to making cigarettes smoking more acceptable to the consumer, thereby discouraging smoking cessation.<sup>7</sup>

In each case we reviewed, the defendants reminded jurors that the only safe cigarette is one that is acceptable to the consumer. For example in the Blankenship case the defence reminded jurors, "If a cigarette doesn't taste good to smokers, they won't trade for it regardless of what the safety benefits might be of it."<sup>18</sup> Jurors were also told, "...we make the safest cigarette that is acceptable to the smoker."<sup>18</sup> In the Schwarz case jurors were told, "Philip Morris is doing everything it can to work with the public health community to try to make a better, a less addictive cigarette."<sup>17</sup>

We do not think these arguments are valid. A safer (not safe) cigarette is one that is not especially acceptable to smokers. In other words, a cigarette that is less satisfying and more difficult to inhale, encouraging users to cut down or quit instead of continue smoking, would be far safer than one that is made to be easier to inhale and more acceptable to the smoker to continue using.<sup>10 11</sup> Replacing commercially viable high tar cigarettes with new lower tar versions designed to make it easier for the smoker to take more frequent and bigger puffs can be seen as a step towards making cigarettes more, not less, hazardous. The fact that many smokers switched to filtered and lower tar brand cigarettes under the mistaken belief that these cigarettes were less risky than their higher tar counterparts illustrates how consumers have been misled by cigarette companies.<sup>9</sup> Plaintiff attorneys should consider stealing a page from the defendants' legal strategy by acknowledging that public health officials were mistaken when they encouraged smokers to switch to filtered in the 1950s and 60s and low tar cigarettes in the 1970s. However, the mistake can be attributed to the actions of the cigarette companies that chose not to divulge what they knew about how alteration in cigarette design would contribute to changes in how people would smoke the new filtered and lower tar cigarettes.<sup>4-9 12-14</sup>

What accounts for the largely successful track record of cigarette companies defending themselves against charges that they have marketed a defective product and could have done more to make cigarettes safer? For one thing, it appears that defence attorneys have successfully persuaded jurors to accept the premise that filtered and reduced tar cigarettes are better or at least no worse than the higher tar, unfiltered cigarettes which they replaced.<sup>27 28</sup> It is noteworthy that the cigarette companies have relied primarily on their own scientists to present the evidence to refute product defect

## What this paper adds

Are cigarettes defective? Should cigarette companies be held liable for not doing more to make cigarettes less dangerous? Cigarette companies say "no" to both of these questions and have persuaded jurors in many previous tobacco cases to agree with them. This paper describes the arguments used by cigarette companies to defend themselves against product defect claims and identifies flaws in these arguments.

charges. Nearly all of these scientists have training in toxicology and are comfortable presenting data on a wide array of technically complex tests that relate to smoke chemistries and animal testing. These scientists all tend to tell the same story about how cigarette companies have invested millions of dollars to reduce tar yields and make cigarettes less toxic.<sup>29-31</sup> Because of their technical competency these witnesses are likely to be perceived as highly credible experts. Plaintiffs on the other hand have tended to rely on industry whistleblowers<sup>32-37</sup> whose motivation for testifying is often challenged in court, or psychologists,<sup>38</sup> medical doctors,<sup>39-41</sup> and/or public officials<sup>42 43</sup> who have little direct experience in designing and testing cigarettes and who may disagree on what constitutes a safer cigarette.

As a counter argument to the cigarette companies' claim that they have worked hard to make their products safer, plaintiff attorneys should focus on how cigarette design changes have actually made smoking more acceptable to smokers and thereby discouraged smoking cessation.<sup>7 10 11</sup>

## ACKNOWLEDGEMENTS

Grateful acknowledgement is extended to Steven D Dvyniak and Penny Hausler at Roswell Park Cancer Institute for assisting us in obtaining and excerpting the trial documents reviewed in this paper. We also wish to acknowledge the generous research support provided by grants from the National Cancer Institute (#CA087486) and the American Legacy Foundation (#6211) to the Michigan Public Health Institute, Center for Tobacco Use Prevention and Research (Okemos, Michigan, USA) and from the Flight Attendant Medical Research Institute to the Roswell Park Cancer Institute (Buffalo, New York). The views expressed in this paper do not necessarily represent those of the National Cancer Institute, the American Legacy Foundation, or the Flight Attendant Medical Research Foundation, their staff or Board of Directors.

## Authors' affiliations

**K M Cummings, A Brown**, Department of Health Behavior, Roswell Park Cancer Institute, Buffalo, New York, USA

**C E Douglas**, Tobacco Control Law & Policy Consulting, Ann Arbor, Michigan, USA

Disclosures: Dr Cummings has served as an expert witness against the tobacco companies in several lawsuits for which he has received fees for this work. Mr Brown has also served as a consultant to plaintiff's attorneys who are suing tobacco companies. Mr Douglas has provided service and consultation to law firms that have filed lawsuits against tobacco companies, including acting as co-counsel in some of those cases.

## REFERENCES

- 1 Daynard RA. Catastrophe theory and tobacco litigation. *Tobacco Control* 1994;3:59-64.
- 2 Daynard RA. Why tobacco litigation? *Tobacco Control* 2003;12:1-2.
- 3 Philip Morris Tobacco Company. Litigation - Primary Questions. April 11, 1995. Tobacco Documents Online, Bates No. 2048537878-2048537924.
- 4 Hurt RD, Robertson CR. Prying open the door to the cigarette industry's secrets about nicotine - The Minnesota Tobacco Trial. *JAMA* 1998;280:1173-81.
- 5 Kessler DA. The control and manipulation of nicotine in cigarettes. *Tobacco Control* 1994;3:362-9.
- 6 Douglas CE. Taking aim at the bull's-eye: the nicotine in tobacco products. *Tobacco Control* 1998;7:215-18.

- 7 **Kozlowski LT**, O'Connor R. Cigarette filter ventilation is a defective design because of misleading taste, bigger puffs, and blocked vents. *Tobacco Control* 2002;11(suppl 1):i40-50.
- 8 **Pauly JL**, Mepani AB, Lesses JD, et al. Cigarettes with defective filters marketed for forty years: what Philip Morris never told smokers. *Tobacco Control* 2002;11(suppl 1):i51-61.
- 9 **Pollay RW**, Dewhirst T. The dark side of marketing seemingly "Light" cigarettes: successful images and failed fact. *Tobacco Control* 2002;11(suppl 1):i18-31.
- 10 **Henningfield JE**, Benowitz NL, Slade J, et al. Reducing the addictiveness of cigarettes. *Tobacco Control* 1998;7:281-93.
- 11 **Farone WA**. Harm reduction: 25 years later. *Tobacco Control* 2002;11:287-8.
- 12 **Cummings KM**, Morley, Hyland A. Failed promises of the cigarette industry and its effect on consumer misperceptions about the health risks of smoking. *Tobacco Control* 2002;11(suppl 1):i10-16.
- 13 **Pollay RW**. Propaganda, puffing and the public interest: the scientific smoke screen for cigarettes. *Public Relations Review* 1990;16:27-42.
- 14 **Kluger R**. *Ashes to ashes: America's hundred-year cigarette war, the public health, and the unabashed triumph of Philip Morris*. New York: Alfred A Knopf, 1996.
- 15 **Judge Richard J. Ganucheau**. Per Curiam. Gloria Scott and Deania Jackson, on behalf of themselves and all other persons similarly situated v. The American Tobacco Company, Inc., et al. Ad Hoc Division, Civil District Court Parish of Orleans, Court of Appeal, Fourth Circuit, State of Louisiana, Docket No. 2003-C-1872, November 4, 2003.
- 16 **Boeken vs. Philip Morris, Inc.** Defendants' opening statement, April 2, 2001, Superior Court of the State of California for the County of Los Angeles, Case No. BC 226593, <http://tobaccodocuments.org/datta/dosboeken040201.html>, pp 1-58.
- 17 **Schwarz vs. Philip Morris, Inc.** Defendants' opening statement, February 6, 2002, Circuit Court of the State of Oregon for the County of Multnomah, Case No. 0002-01376, <http://tobaccodocuments.org/datta/dosschwarz020602am.html>, pp 1-95 and <http://tobaccodocuments.org/datta/dosschwarz020602pm.html>, pp 1-103.
- 18 **Blankenship vs. Philip Morris Inc.** et al. Defense opening statement, September 10, 2001. In the Circuit Court of Ohio County, Wheeling, West Virginia Case No. 00-C-6000, <http://tobaccodocuments.org/datta/dosblankenshiptwo091001.html>, pp 1-130.
- 19 **Engle v. R.J. Reynolds Tobacco Co.**, et al. Opening statement by Philip Morris, Inc., October 20, 1998, Circuit Court of the 11th Judicial Circuit in and for Dade County, Florida, Case No. 94-08273 CA (22), <http://tobaccodocuments.org/datta/dosengle102098am.html>, pp 1-90.
- 20 **Engle v. R.J. Reynolds Tobacco Co.**, et al. Opening statement by R.J. Reynolds Tobacco Company, October 20, 1998, Circuit Court of the 11th Judicial Circuit in and for Dade County, Florida, Case No. 94-08273 CA (22), <http://tobaccodocuments.org/datta/dosengle102098pm.html>, pp 1-81.
- 21 **Pankow JF**, Tavakoli AD, Luo W, et al. Percent free base nicotine in the tobacco smoke particulate matter of selected commercial and reference cigarettes. *Chem Res Toxicol* 2003;16:1014-18.
- 22 **Henningfield JE**, Pankow JF, Garrett BE. Ammonia and other chemical base tobacco additives and cigarette nicotine delivery: issues and research needs. *Nicotine Tob Res* 2004;6:199-205.
- 23 **Brown & Williamson Tobacco Corporation Research & Development**. R&D-BO 19-92. PM's Global Strategy: Marlboro Product Technology, October 26, 1992, UCSF Legacy Library, Bates No. 582102369-582102606.
- 24 **Henningfield JE**, Benowitz NL, Ahijevych K, et al. Does menthol enhance the addictiveness of cigarettes? An agenda for research. *Nicotine Tob Res* 2003;5:9-11.
- 25 **Stanfill SB**, Ashley DL. Quantification of flavor-related alkenylbenzenes in tobacco smoke particulate by selected ion monitoring gas chromatography-mass spectrometry. *Journal of Agricultural and Food Chemistry* 2000;48:1298-306.
- 26 **Wakeman H**. File memo regarding Hazelton Laboratories. Philip Morris Tobacco Company, July 22, 1963, UCSF Legacy Library, Bates No. 2022241978.
- 27 **Hastrup JL**, Cummings KM, Swedrock T, et al. Consumers' knowledge and beliefs about the safety of cigarette filters. *Tobacco Control* 2001;10:84.
- 28 **Cummings KM**, Hyland A, Giovino GA, et al. Are smokers adequately informed about the health risks of smoking and medicinal nicotine? *Nicotine Tob Res* 2004;6(suppl 3):S333-40.
- 29 **Trial testimony of David Eugene Townsend, PhD, toxicologist at R. J. Reynolds Tobacco Company in Engle vs. R.J. Reynolds Tobacco Company**, et al. March 1, 1999, Circuit Court of the 11th Judicial Circuit in and for Dade County, Florida, Case No. 94-08273 CA (22), <http://tobaccodocuments.org/datta/townsend030199.html>, pp 1-128.
- 30 **Deposition testimony of Bernard Scott Appleton, toxicologist at Brown & Williamson Tobacco Company, in Engle vs. R.J. Reynolds Tobacco Company**, et al. December 11, 1997, Circuit Court of the 11th Judicial Circuit in and for Dade County, Florida, Case No. 94-08273 CA (22), <http://tobaccodocuments.org/datta/appletonb121197.html>, pp 1-167.
- 31 **Trial testimony of Richard Allen Carchman, PhD, Director Research and Development at Philip Morris Inc. in Boeken vs. Phillip Morris Superior Court of the State of California for the County of Los Angeles**, Case No. BC 226593, May 7 & 8, 2001, <http://tobaccodocuments.org/datta/carchmanr050701am.html>, pp 1-109, <http://tobaccodocuments.org/datta/carchmanr050701pm.html>, pp 1-82, <http://tobaccodocuments.org/datta/carchmanr050801.html>, pp 1-63.
- 32 **Trial testimony of William Anthony Farone, PhD, former Director of Applied Research at Philip Morris (1976-82), in Engle vs. R.J. Reynolds Tobacco Company**, November 17-18, 1998, Circuit Court of the 11th Judicial Circuit in and for Dade County, Florida, Case No. 94-08273 CA (22), <http://tobaccodocuments.org/datta/faronew111798am.html>, 1-76, <http://tobaccodocuments.org/datta/faronew111798pm.html>, 1-93, <http://tobaccodocuments.org/datta/faronew111898am.html>, 1-125, <http://tobaccodocuments.org/datta/faronew111898pm.html>, 1-102.
- 33 **Trial testimony of William Anthony Farone, PhD, former Director of Applied Research at Philip Morris (1976-82), in Boeken vs. Phillip Morris Superior Court of the State of California for the County of Los Angeles**, Case No. BC 226593, April 3 & 4, 2001, <http://tobaccodocuments.org/datta/faronew040301.html>, pp 1-76, <http://tobaccodocuments.org/datta/faronew040301am.html>, pp 1-108, <http://tobaccodocuments.org/datta/faronew040301pm.html>, pp 1-48.
- 34 **Trial testimony of Ian L. Uydess, PhD, former research scientist at Philip Morris (1979-89), in Engle vs. R.J. Reynolds Tobacco Company**, et al., November 23-24, 1998, Circuit Court of the 11th Judicial Circuit in and for Dade County, Florida, Case No. 94-08273 CA (22), <http://tobaccodocuments.org/datta/uydess112398.html>, 1-186, <http://tobaccodocuments.org/datta/uydess12498pm.html>, 1-144.
- 35 **Trial testimony of Paul Camille Mele, PhD, research scientist who worked with Dr. Victor DeNoble at Philip Morris (1981-84), in Engle vs. R.J. Reynolds Tobacco Company**, et al., December 15 and 21, 1998, Circuit Court of the 11th Judicial Circuit in and for Dade County, Florida, Case No. 94-08273 CA (22), <http://tobaccodocuments.org/datta/melep121598.html>, 1-148, <http://tobaccodocuments.org/datta/melep122198am.html>, 1-75, <http://tobaccodocuments.org/datta/melep122198pm.html>, 1-126.
- 36 **Trial testimony of Jeffrey Wigand, PhD, former Vice President for Research and Development for Brown & Williamson Tobacco Corporation (1988-93), in Falise vs. American Tobacco Company**, et al. United States District Court for the Eastern Division of New York, Civil Action No. 99 CV7392, December 11 & 12, 2000, <http://tobaccodocuments.org/datta/Wigandj121100.html>, 1-193, <http://tobaccodocuments.org/datta/Wigandj121200.html>, 1-225.
- 37 **Deposition of Victor DeNoble, PhD, former Associate Senior Scientist in behavioral research at Philip Morris (1980-84), in Sackman vs. Liggett Group, Inc.**, United States District Court for the Eastern Division of New York, Civil Action No. 93 CV 4155, October 9, 1995, <http://tobaccodocuments.org/datta/denoblev100995.html>, 1-210.
- 38 **Trial testimony of Jack Henningfield, PhD, Blankenship vs. Philip Morris Inc.** et al. Circuit Court of Ohio County, Wheeling, West Virginia Case No. 00-C-6000, September 17, 2001, <http://tobaccodocuments.org/datta/henningfieldj091701am.html>, 1-152, <http://tobaccodocuments.org/datta/henningfieldj091701pm.html>, 1-152.
- 39 **Trial testimony of Neal Leon Benowitz, MD, in Boeken vs. Phillip Morris Superior Court of the State of California for the County of Los Angeles**, Case No. BC 226593, April 10, 2001, <http://tobaccodocuments.org/datta/benowitzn041001.html>, pp1-64.
- 40 **Trial testimony of David Michael Burns, MD, in Schwarz vs. Philip Morris Inc.** Circuit Court of the State of Oregon for the County of Multnomah, Case No. 0002-01376, February 12 & 13, 2002, <http://tobaccodocuments.org/datta/burnsm021202amvol1.html>, pp 1-77, <http://tobaccodocuments.org/datta/burnsm021202pm.html>, pp 1-97, <http://tobaccodocuments.org/datta/burnsm021302.html>, pp 1-104.
- 41 **Trial testimony of Ian Alan Feingold, MD, in Allen vs. R.J. Reynolds Tobacco Company and Philip Morris, Inc.**, United States District Court Southern District of Florida, Miami Division, Case No. 01-4319, February 11, 2003, <http://tobaccodocuments.org/datta/feingoldi021103.html>, pp 1-109.
- 42 **Trial testimony of Ronald Mark Davis, MD, in Whiteley vs. Raybetos-Manhattan, Inc.** et al. Superior Court of the State of California in and for the City and County of San Francisco, Case No. 303184, January 19-21, 2000, <http://tobaccodocuments.org/datta/davisr011900.html>, pp 1-137, <http://tobaccodocuments.org/datta/davisr012000.html>, pp 1-141, <http://tobaccodocuments.org/datta/davisr012100.html>, pp 1-126.
- 43 **Trial testimony of Kenneth Michael Cummings, PhD, MPH, in Engle vs. R.J. Reynolds Tobacco Company et al.**, Circuit Court of the 11th Judicial Circuit in and for Dade County, Florida, Case No. 94-08273 CA (22), June 1 and 5, 2000, <http://tobaccodocuments.org/datta/cummingsk060100.html>, pp 1-131, <http://tobaccodocuments.org/datta/cummingsk060500.html>, pp 1-94.