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THE POTENTIAL EFFECTS OF CORRECTIVE ADVERTISING ON CONSUMER BELIEFS MANDATED BY U.S. VS. PHILIP MORRIS USA, INC. (2006)

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Abstract

In US v. Philip Morris USA Inc. (2006), six major tobacco companies were ordered to provide funding for an extremely large corrective advertising and marketing campaign. The Court ruled that consumers may have been misled and deceived about the (1) health effects of smoking, (2) addictiveness of smoking, (3) lack of health benefit from low tar/light cigarettes, (4) companies' manipulation of nicotine delivery and cigarette design, and (5) health effects of secondhand smoke. Using print advertising copy test procedures, this research focused on the potential effectiveness of test ads submitted to the Court in impacting these target beliefs. In an initial pilot study, reliable multiitem measures for each of these belief themes were developed and assessed. These multi-item belief measures were then employed in the subsequent main study, in which the effects of two versions of a print advertisement (submitted to the Court in this litigation) were tested using a mixed experimental design. As hypothesized, results show that corrective ads can have a positive effect on the belief themes (compared to a control group not exposed to such ads), but there is an interaction demonstrating that some belief themes are more strongly affected by the test ads than are others. Results suggested that the beliefs about light / low tar cigarettes may be substantially affected by such a campaign. The addition to the ad copy of graphic visuals, such as those currently used on cigarette packages in Canada and Australia, had mixed results overall. Contributions of the research include the development of reliable multi-item measures for critical smoking-related beliefs, as well as implications of the copy test findings for this specific case and corrective advertising, tobacco counteradvertising, and public policy, in general.

Introduction

With an estimated 44.5 million people in the United States smoking cigarettes, it is apparent that the effects of smoking are widespread (Centers for Disease Control and Prevention 2005). A comprehensive report from the Centers of Disease Control and Prevention (2005) determined that cigarette smoking causes some 440,000 premature deaths annually. Although such statistics suggest that the harmful health risks and other adverse consequences of smoking should be well-recognized by most consumers, a United

States federal court has recently ordered the use of advertising and promotion to augment consumer knowledge by targeting potential misperceptions related to smoking. Specifically, in *US vs. Phillip Morris USA, Inc.*, Judge Gladys Kessler ordered tobacco companies to initiate corrective advertising related to consumer beliefs regarding cigarette smoking, given the premise that consumers may have been misled by tobacco companies' marketing efforts over the past fifty years. Antismoking media campaigns have been shown to be a critical aspect of tobacco control programs, and according to the Court's judgment (*US vs. Phillip Morris USA, Inc, 2006*, p. 4), tobacco companies will be required to:

[make] corrective statements concerning each of the following: (a) the adverse health effects of smoking; (b) the addictiveness of smoking and nicotine; (c) the lack of any significant health benefit from smoking "low tar," "light," "ultra light," "mild," and "natural," cigarettes; (d) defendants' manipulation of cigarette design and composition to ensure optimum nicotine delivery; and (e) the adverse health effects of exposure to secondhand smoke (also known as environmental tobacco smoke, or ETS).

The advertising and promotion actions that are being required include prime-time television, newspapers, package 'onserts' and retail displays as part of the integrated marketing communications campaign. This campaign will focus on communicating specific messages related to prior misleading statements and marketing by major tobacco companies. Thus, the goal of this overall corrective campaign is to mitigate any inappropriate or inaccurate consumer beliefs about smoking and to thwart any future deceptive marketing practices that possibly would contribute to or encourage tobacco use. The literature on corrective advertising indicates that in efforts to rectify the deception of consumers, campaigns can be required of firms when the courts determine that consumers have been misled by prior marketing and advertising (Wilkie, McNeill and Mazis 1984; Armstrong, Gurol, and Russ 1979). In the judgment for US vs. Phillip Morris USA, Inc. Judge Kessler states:

(This case) is about an industry, and in particular these Defendants, that survives, and profits, from selling a highly addictive product which causes diseases

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that lead to a staggering number of deaths per year, an immeasurable amount of human suffering and economic loss, and a profound burden on our national health care system. Defendants have known many of these facts for at least 50 years or more. Despite that knowledge, they have consistently, repeatedly, and with enormous skill and sophistication, denied these facts to the public, to the Government, and to the public health community. Moreover, in order to sustain the economic viability of their companies, Defendants have denied that they marketed and advertised their products to children under the age of eighteen and to young people between the ages of eighteen and twenty-one in order to ensure an adequate supply of "replacement smokers" as older ones fall by the wayside through death, illness, or cessation of smoking, (pp. 3-4).

This decision by Judge Kessler will require massive promotional expenditures (many millions of dollars) by major tobacco companies. These companies include Philip Morris, Altria, Brown & Williamson, Lorillard, R.J. Reynolds, and British-American Tobacco. Her ruling indicates the perceived importance of using integrated marketing communications in efforts both to remedy past deceptive business practices and to help impact future practices as well.

Therefore, this paper reports the results of: (1) a pilot test, to initially develop measures and assess consumers' beliefs about specific themes related to smoking that are identified by Judge Kessler as targets for the corrective campaign, and (2) a subsequent experimental copy test study to assess effects of an ad submitted to the Court for potential use in the corrective campaign. Based on the ruling in *US vs. Phillip Morris USA, Inc.*, the five consumer beliefs identified by the Court will be examined. In the initial pilot study, reliable multi-item measures of the consumer beliefs were developed. In the subsequent primary experimental study for the thesis, measures developed in the pilot study were used to address the following research questions:

- (1) What are the levels for each of these beliefs and does the strength of these beliefs suggest that consumers have been misled or deceived on all of these beliefs, due to prior actions of tobacco companies?
- (2) Given the strength and consumers' confidence in these specific beliefs, are there some beliefs that are potentially more likely to be impacted by a corrective campaign than others?
- (3) What is the effect of proposed test advertisements on each of the specific belief types and consumers' confidence in these beliefs? How are these ads related to future smoking intentions and smokers' intention to quit?
- (4) Are some ads that integrate graphic pictorial cues relevant to the belief types more effective than current suggested print ads that contain only verbal copy?

Corrective Advertising and Study Background

Origins of Corrective Advertising

Corrective advertising was proposed in the 1970s by the Federal Trade Commission (FTC). It was intended for use by firms that had misled consumers, which "would have to rectify its [past] deception in future advertisements" and with the intent to deter future use of deceptive advertisements all together. One of the first noted cases involving corrective advertising was in 1969 and was deemed the "SOUP" case. In this case, students from George Washington University brought litigation against Campbell's Soup because of ads shown with clear marbles being placed at the bottom of bowls to force the ingredients to the top of the bowl for photographic purposes. When the courts banned the firm from this practice, the students petitioned the court to intervene in the case. They argued "that a corrective message was needed to inform consumers of the deception; otherwise, they would never become aware they had been deceived." Although the intervention was denied, the FTC stated that "the concept of corrective advertising was of interest and could be considered in more serious case circumstances." Less than six months later, the FTC began using corrective advertising in formal complaints against firms for deceptive practices (Wilkie, McNeill, and Mazis 1984). Research since this time has shown that corrective advertisements often appear to be capable of making a difference in the minds of consumers and altering beliefs about the product and its attributes. However, as indicated in many past cases, it may not be sufficient to completely correct consumer misperceptions (Mallesons, Stephens, and Jaques 2005; Armstrong, Gurol, and Russ 1979; Wilkie et al. 1984).

Belief Themes Related to Tobacco Use

The five consumer beliefs tested in this thesis were drawn directly from the corrective advertisement themes set forth by Judge Kessler in *US vs. Phillip Morris USA*, *Inc.* Each of these themes was a focus of the trial and was originally derived after a landmark revelation of documents that had been concealed by the tobacco companies themselves. In addition, the study examined the effects of one additional theme, the deceptiveness of the tobacco companies, a theme related to the entire *US vs. Phillip Morris USA*, *Inc.* case, and a theme examined in past research (Netemeyer, Andrews, and Burton 2005; Tangari et al. 2007).

In 1998 secret documents from seven cigarette manufactures and two affiliated organizations were revealed for the first time. These documents disclosed information from six million company documents, including memos, faxes, and letters. In these documents, information disclosed included statements indicating that the tobacco industry and these companies did in fact know for many years that: (1) nicotine was addictive; (2) they were manufacturing a harmful product; (3) they failed to warn the public through their denial of the

danger; and (4) they purposely increased the nicotine and its potency in the cigarettes (WHO 2006). Consistent with these documents, in the Final Judgment and Remedial Order, Judge Kessler is requiring the tobacco companies to make corrective statements concerning these specific issues that the tobacco companies had denied for so many years. Addressing the belief theme of the lack of health benefit from smoking "low tar," "light," "ultra light," "mild," and "natural," cigarettes, Judge Kessler states on page 3 of the Final Judgment and Remedial Order that tobacco companies will no longer be able to use...

forbidden health descriptors [including] the words "low tar," "light," ultra light," "mild," "natural," and any other words which reasonably could be expected to result in a consumer believing that smoking the cigarette brand using that descriptor may result in a lower risk of disease or be less hazardous to health than smoking other brands of cigarettes (US vs. Phillip Morris USA, Inc. 2006).

Additionally, consistent with our test of belief themes, a corrective statement from the tobacco companies concerning "the addictiveness of smoking and nicotine" was required by Judge Kessler. This requirement was based on not only the scientific evidence of the addictiveness of cigarettes, but also revelations in the recently disclosed documents in which the companies make statements including:

"Think of the cigarette pack as a storage container for a day's supply of nicotine...think of the cigarette as a dispenser for a dose unit of nicotine."

Philip Morris chemist, 1972

"Very few consumers are aware of the effects of nicotine, i.e., its addictive nature and that nicotine is a poison."

Brown & Williamson, 1978

"[T]he entire matter of 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."

Tobacco Institute executive, 1980 (WHO 2006)

Thus, the dangers and risks to health posed by cigarette smoking were very apparent even in the middle of the last century. Companies were keenly aware of the relationship between smoking and addiction.

Pilot Study

The pilot study was initially conducted to 1) develop reliable multi-item measures of the belief themes identified in *U.S. vs. Philip Morris*, 2) examine consumers' level of confidence in these belief themes, and 3) test differences in the levels of the belief themes held by consumers. Pools of potential items were generated for each of the five belief themes plus beliefs about the deceptiveness of the tobacco

companies, a theme clearly related to the actions of the companies documented in *U.S. vs. Philip Morris*. Items were generated through a review of the literature (e.g., Netemeyer, Andrews and Burton 2005; Tangari et al. 2007) and development by the researchers. All items were seven point scales anchored by endpoints of "Strongly Disagree" ('1') and "Strongly Agree" ('7'). The participant sample was composed of 55 students enrolled in an upper division undergraduate business class. Ages ranged from 17 to 35 (Mean = 22.0); 50% were female and 50% male.

Both factor analyses and coefficient alpha reliability tests were used to reduce the number of belief theme items and develop reliable multi-item measures. Final measures and coefficient alpha reliabilities are shown in Appendix A. Reliabilities are all satisfactory (Nunnally and Bernstein 1994) for these belief theme scales. To measure confidence and consumers' certainty in these beliefs, a single item was used for each belief theme. For example, for the confidence in the belief regarding secondhand smoke, respondents were asked, "In general, how confident / certain are you that the ratings you gave on the above statements with regard to the harmfulness of secondhand smoke are correct?" These items were also measured on a seven-point scale using endpoints of "Not at all confident/certain" (coded as a '1') and "Extremely confident/certain" (coded as a '7').

These multi-item measures were then used to examine the mean scores and confidence levels for each of the belief themes. Means and tests of differences in means were examined using a series of t-tests are shown in Table 1.

Results in Table 1 suggest several conclusions relevant to US vs. Philip Morris USA. First, the mean belief about the theme that level of low-tar/light was significantly lower than the other themes measured. Second, the mean confidence level of low-tar/light was also significantly lower than the other themes measured. Therefore, these findings suggest that the low-tar/light belief has the most probable chance of being changed through corrective advertising. This likelihood is reinforced by the fact that all of the belief means other than low tar/light were substantially above the scale midpoint of '4' (p < .05) based on t-tests for the seven point measure. The results also show that several means (e.g., secondhand smoke, health effects) were so close to the theoretical scale maximum (i.e., '7') that there is little room for upward movement due to the strength of the belief. For this small sample of undergraduate students, these findings suggest that corrective ads may be more likely to affect some of the beliefs identified in U.S. vs. Philip Morris than others.

Predictions for the Main Study Experiment

Effects on the Belief Themes

Tangari et al. (2007) recently examined effects of an anti-tobacco ad campaign run for many months in the state of Wisconsin. They focused on beliefs regarding tobacco

Belief Theme	Mean Belief Theme Level	Mean Confidence Level
Health Effects (a)	6.17 d.e.f	5.57 b.e.f
Addictiveness (b)	5.98 ^{e.f}	5.23 a.c.d.f
Secondhand Smoke (c)	6.26 ^{e.f}	5.68 b.c.f
Deceptiveness (d)	5.65 a.c.f	5.67 b.c.f
Cigarette manipulation (e)	5.63 a.b.c.f	5.18 a.c.d.f
Low-tar/Light (f)	4.59 a,b,c,d,e	4.59 a.b.c.d.e

Note: Superscript letters indicate significant differences in belief themes. For example, the health effects' mean is significantly different (p < .05) from the means for the belief themes of deceptiveness, cigarette manipulation, and low tar/light perceptions.

industry deceptiveness, smoking addictiveness, harmfulness of second-hand smoke, and restrictions on smoking at different public venues. Generally, they found that attitudes related to the campaign affected belief levels and had somewhat stronger effects on some beliefs (specifically, industry deceptiveness and secondhand smoke effects) than on others (addictiveness). Given their findings related to effects of an ad campaign across various beliefs in general, in H1 it is predicted that there will be positive effects on beliefs (in general) for consumers exposed to corrective test ads, as compared to consumer groups not exposed to the test ads. In addition, given pilot test results about differential belief strength, an interaction is predicted in H2--specifically, that exposure to the test ads will have a more positive effect on some belief themes (such as the light/ low tar theme) than themes such as health or addictiveness of smoking. Both the pilot study and past research on light / low tar cigarettes (Etter et al. 2003; Kozlowski and Pillitteri 2001, Kozlowski et al. 1998) indicate that many consumers may perceive health benefits from smoking light cigarettes, suggesting the potential for corrective advertising to affect this belief. These two primary research hypotheses are summarized below.

- H1: Exposure to corrective ads will have a positive effect on belief themes compared to a control group not exposed to the corrective ads.
- H2: Exposure to corrective ads will have a stronger effect on some belief themes than others. Specifically, the ads should have a more positive effect on the lack of health benefits of light and low tar cigarettes theme than the other belief themes.

The next prediction concerns the effect of the inclusion of visuals related to the belief themes in the corrective ads, compared to corrective ads that present only text copy.

Research concerning the use of graphic visuals on cigarette packages to help communicate information on the health effects of smoking indicates visual warnings on package fronts elicit higher levels of negative affect and reduced evaluations of the attractiveness of the package (Kees et al., 2006). In the same study, it was reported that using pictures increased both intent to quit smoking and perceived effectiveness in doing so. A reduction in smoking levels in Canada is attributed to the use of the visuals on Canadian cigarette packages (Hammond 2004). Thus, H3 predicts that:

H3: The use of visuals in corrective ads will increase the overall strength of effects on the belief themes compared to corrective ads not using visuals.

Predictions for Consumers' Confidence in the Belief Themes

In addition to interest in belief levels, the consumer belief and attitude literature has been concerned with belief certainty or confidence (Marks and Kamins 1988; Fazio and Zanna 1978). The confidence with which a belief is held potentially influences the effects of persuasion and behavioral consequences of the belief (Petty 2002). For many consumers, while the belief theme itself may not be influenced by a corrective advertisement, the confidence with which the belief is held may be influenced. Thus, based on the literature on confidence and results of the pilot study, the following is predicted for effects on consumer confidence.

- H4: Exposure to corrective ads will have a positive effect on consumers' confidence in the belief themes compared to a control group not exposed to the corrective ads.
- H5: Exposure to corrective ads will have a stronger effect on consumers' confidence in some belief themes

than on others. Specifically, the ads should have a more positive effect on consumers' confidence in the lack of health benefits of light and low tar cigarettes theme than the other belief themes.

H6: The use of visuals in the corrective ads will increase the overall confidence in effects on the belief themes compared to corrective ads not using visuals.

Methods Used in the Main Study

Procedure and Experimental Design of the Main Study

Study predictions were tested in a 3 X 6 mixed experimental design in which there was one between subjects factor and one within subjects factor. The between subjects factor was the corrective ad condition with the following three levels: (1) a control in which no ad was shown; (2) a corrective ad containing copy only; and (3) a corrective ad that contained both copy (identical to condition 2) and two graphic visuals (relating to focal belief themes) at the bottom of the ad. Procedures used followed the recommendations for advertising copy testing in legal cases involving potential deception (Maronick 1995). The corrective ad using only copy was an ad obtained as part of court documents in US vs. Philip Morris USA, Inc. Examples of the ad stimuli are shown in Appendices B and C. The ad addressed each of the belief themes for which consumers may have been misled, based on the ruling in US vs. Philip Morris USA, Inc. Respondents were exposed to only one of the three ad conditions, and conditions were randomly assigned to study participants. The within subjects factor consisted of the six belief themes of interest; all belief themes were measured for each of the participants in the sample.

Survey, Sample and Administration Procedures

The survey was constructed based around the belief themes listed in the Final Judgment and Remedial Order in the US vs. Philip Morris USA, Inc. The survey questions assessed the subjects' different beliefs surrounding the five themes, and the strength of and consumers' confidence in those beliefs. In conditions in which participants saw the corrective ads, filler ads were placed both before and after the corrective advertisement with the purpose of simulating a "real-life" experience in which a person would actually see a number of ads in a setting rather than one single advertisement. Approval of the study was obtained from the Institutional Review Board at the University of Arkansas, and standard informed consent procedures were used.

For the primary administration sample and method, participants were undergraduate students at the University of Arkansas with ages ranging from 18-35. Participants were given the survey during class in their normal classroom setting. In each instance, students were asked to read each question carefully and not return to previous sections once completed. Students exposed to corrective ad conditions were instructed to read each advertisement in the ad packet

(the test ad and the two filler ads) carefully and examine all pictures thoroughly. All participants received credit (varied according to each professor) for participating in the survey. Five classrooms were used for this administration procedure. The sample size was 134 with 45 percent males and 55 percent females. The average age of the sample was 22 years.

Measures

Belief measures tested in this study that are directly associated with US vs. Philip Morris USA, Inc. include the following: (a) adverse health effects of smoking, (b) smoking addictiveness, (c) lack of health benefit from smoking "low tar," "light," "mild," and "natural," cigarettes, (d) defendants' manipulation of cigarette design and composition to ensure optimum nicotine delivery, (e) and secondhand smoke. As noted previously, the sixth theme related to tobacco company deceptiveness (based on actions of the companies documented in U.S. vs. Philip Morris USA, Inc.). Participants' beliefs in each of the themes were assessed using multi-item seven point, Likert-type scales with endpoints of "Strongly Disagree" (coded as a '1') and "Strongly Agree" (coded as a '7'), and the measures are shown in Appendix A. Negatively worded items were recoded prior to creating the summed measures. All belief theme measures were summed and divided by the number of items to create mean belief scores. All coefficient \alpha reliability estimates for the multi-item belief measures exceeded .70, and thus are considered acceptable (Nunnally and Bernstein 1994).

For the measures of the confidence in the six belief themes, seven point, single item measures were employed. Each statement used endpoints of "Not at all confident/certain" (coded as a '1') and "Extremely confident/certain" (coded as a '7'). Examples of the statements used to measure confidence include the following: "In general, how confident/certain are you that the ratings you gave on the above statements with regard to potential effects of regularly smoking cigarettes on diseases such as cancer, heart disease, and emphysema are correct?;" "In general, how confident/certain are you that the ratings you gave on the above statements with regard to the addictiveness of smoking are correct?"

Several measures were designed to address smokers specifically. A seven-point scale anchored with "Strongly disagree/Strongly agree" was used to assess whether respondents who were smokers had the desire to quit smoking. The statement read: "In general, I would like to quit smoking." To measure participants' smoking related intentions, a seven-point anchored scale with "Definitely not/Definitely yes" was used. Statements included: "Do you think you will be smoking cigarettes regularly one year from now?" and "Do you think you will be smoking cigarettes regularly five years from now?"

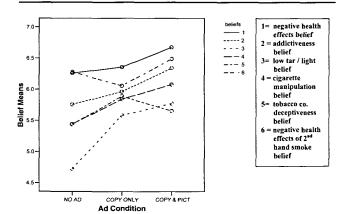
Results

Tests of Effects of the Advertisements on Belief Themes

H1 and H2 predicted that exposure to corrective ads would have a positive effect on belief themes (compared to a control group not exposed to the ads), and that the corrective ads would have a stronger effect on some belief themes than others. To test these predictions, a 3 X 6 mixed analysis of variance was performed initially using the corrective ad

Figure 1

Effects of the Proposed Corrective Advertisement on Belief Themes



manipulation as a between subjects factor and the belief theme types as a within-subjects factor. Follow-up univariate tests and contrasts were then performed to test effects between different ad conditions for each belief theme and specifically test the effect of the inclusion of the graphic visual in the ad (H3).

Results of the 3 X 6 analysis of variance identify a significant difference between beliefs (F=28.6, p<.01), a significant difference due to ad condition (F=6.2, p<.01), and a significant interaction between beliefs and ad conditions (F=2.9, p<.01). These results indicate that there is a significant effect of exposure to the corrective ad, but that the strength of this effect varies across the different beliefs. This pattern of findings supports H1 and H2.

Figure 1 shows that the means for these beliefs are relatively strong across all conditions, and are particularly high for the ad exposure conditions. However, note that even in the no ad control, all beliefs means are substantially above the scale midpoint of '4' (t-values range from 3.46 to 21.0; p < .01 for all tests). Also, the means are especially high for the health-related belief (Mean=6.26; t= 21.0) and secondhand smoke effects (Mean= 6.28; t= 16.6), with both approaching the theoretical scale maximum of '7.' These results are consistent with the pilot study, and indicate that despite past misleading actions and marketing tactics from the tobacco companies, this sample of consumers does not appear to have

been misled or have largely inaccurate beliefs about these consequences. Also consistent with the pilot study, the lowest belief mean is for the light/low tar cigarettes (Mean= 4.73), a score relatively close to the scale midpoint.

Table 2 shows results of univariate analyses of variance and follow-up contrasts for each of the belief themes. H2 predicted that the effect on beliefs about the lack of health benefits of light and low tar cigarettes would be stronger in relation to the other beliefs. As can be seen in Figure 1 and Table 2, there is an effect of the ad exposure on this specific belief (see line 3). The result of the analysis of variance for the light and low tar belief is significant (F=7.6, p<.01), and show that the ad condition impacts beliefs about health effects of light and low tar cigarettes.

As also shown in Figure 1 and Table 2, the ad appears to have effects on several of the other beliefs. Specifically, the exposure to the corrective advertisement has significant effects on the addictiveness beliefs

Table 2. Effect of the Corrective Advertisements on Smoking Belief Measures of Interest in US vs. Philip Morris, USA

	Mean Belief Values				
Belief Themes	No Ad <u>(Control)</u> ª	Ad with Copy Only b	Ad with Copy and Graphic <u>Visual^c</u>	F-Values	
Health Effects	6.26°	6.36°	6.64 ^{a.b}	4.06*	
Addictiveness	5.76°	5.96°	6.32 ^{a.b}	4.98**	
Secondhand Smoke	6.28	6.06	6.46	2.08	
Deceptiveness	5.44	5.89	5.60	1.32	
Cigarette manipulation	5.44 ^{b.c}	5.84ª	6.07ª	4.39*	
Low-tar/Light	4.73 b.c	5.58*	5.74ª	7.57**	

^{*} p <.05; **p <.01.

Note: Belief means are based on seven-point scales. For belief levels in which the ad condition had a significant effect, superscript letters indicate significant differences for follow-up contrasts between the ad conditions. For example, the belief in health effects' mean for the ad with both copy and the graphic visual is significantly different (p < .05) from the means for the no ad control and the ad with copy only, but the control and the ad with copy only are not significantly different.

(F=5.0, p<.01), the manipulation beliefs (F=4.4, p<.05), and the health beliefs (F=4.1, p<.05). Exposure to the ad strengthens each of these beliefs. The effects of the ad condition on the secondhand smoke and the deceptiveness beliefs were nonsignificant (p>.10).

H3 concerns the effect of the graphic visual and predicts that the addition of the graphic visuals to the corrective ads will increase the overall strength of effects on the belief themes compared to corrective ads not using visuals. As shown in Table 2, contrasts (least significant differences) that examine the difference between the ads with the graphic visuals and the ads with copy only showed significant mean differences for the beliefs of health effects (p<.05), addictiveness (p=.05), and secondhand smoke (p<.05). As can be seen in Figure 1 and Table 2, each of the means for these beliefs in the context of the graphic visual is greater than the means when the ad uses copy only. Thus, these findings offer mixed results for tests of H3.

Tests of Effects of the Ads on Consumer Confidence in Their Beliefs about Smoking

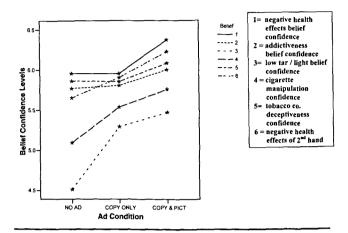
Predictions H4 to H6 concern advertising effects on consumers' confidence in their beliefs. Similar to the analyses for the beliefs shown in the prior section, a 3 \times 6 mixed analysis of variance was performed to test these predictions. Results of the 3 \times 6 repeated measures analysis indicate that there is a significant difference in the confidence of beliefs (F=27.8, p<.01), a significant difference based on ad condition (F=4.8, p=.01), and a significant interaction between the

beliefs and the ad condition (F=2.0, p<.05). Exposure to the corrective ad has a significant effect, but the strength of this effect varies across the different beliefs. This pattern of findings supports H4 and H5. Figure 2 shows a plot of the effects of the corrective ad exposure on belief confidence levels, and Table 3 shows univariate results and contrasts.

H5 predicts that exposure to corrective ads would have a stronger effect on consumers' confidence in some belief themes (i.e., lack of health benefits of light and low tar cigarettes) than on others. As can be seen in Figure 2 and Table 2, there is a substantial effect of the ad exposure on the light and low tar belief. The result of the analysis of variance for confidence levels of this belief is significant (F=6.6,

Figure 2

Effects of the Proposed Corrective Advertisement on Belief Theme Confidence



p<.01). In addition, as can be seen in Figure 2 and Table 3, the ad has effects on several of the other belief confidence levels. Specifically, the exposure to the corrective advertisement has significant effects on the confidence in manipulation beliefs (F=3.6, p<.05), the confidence in deceptiveness beliefs (F=3.5, p<.05), and the confidence of health related beliefs (F=3.1, p=.05). Effects of the ad condition on the confidence levels of secondhand smoke and addictiveness beliefs are nonsignificant (p>.10).

Table 3. Effect of the Corrective Advertisements on Consumers' Confidence in Smoking Beliefs of Interest in US vs. Philip Morris, USA

	Mean Confidence Values			
Belief Themes	No Ad (Control)	Ad with Copy Only b	Ad with Copy and Graphic <u>Visual^c</u>	F-Values
Health Effects	5.95°	5.90°	6.37 ^{a,b}	3.05*
Addictiveness	5.77	5.81	6.00	0.89
Secondhand Smoke	5.86 ^f	5.83	6.08	0.77
Deceptiveness	5.65 °	5.88	6.22 ª	3.48*
Cigarette manipulation	5.09°	5.52 a	5.76 ª	3.61*
Low-tar/Light	4.51 b.c	5.24 a	5.47 ª	6.58**

* p <.05; **p <.01.

Note: Confidence measures are based on seven-point scales. For confidence levels in which the ad condition had a significant effect, superscript letters indicate significant differences for follow-up contrasts between the ad conditions. For example, the confidence in health effects' mean for the ad with both copy and the graphic visual is significantly different (p < .05) from the means for the no ad control and the ad with copy only, but the control and the ad with copy only are not significantly different.

H6 predicted that the addition of the graphic visuals to the corrective ads would increase the overall confidence in effects on the belief themes compared to corrective ads with no visuals. Contrasts that examine the difference between the ads with the graphic visuals and the ads with copy only showed significant differences for health effects (p<.05). As can be seen in Figure 2 the mean for the confidence level of this belief when the graphic visual is present is greater than the mean when the ad uses copy only. Thus, while Figure 2 shows that the inclusion of a graphic visual appears to increase confidence somewhat across all of the beliefs, Table 3 shows that it is statistically significant only for the confidence in health beliefs. Hence, these findings offer little support for tests of H6.

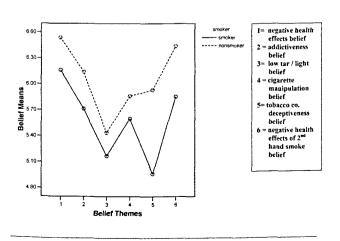
Do Effects of the Corrective Ads Differ for the Beliefs of Smokers vs. Nonsmokers?

While US vs. Phillip Morris USA, Inc. (2006) does not specify any differences between current smokers and nonsmokers, a key question for public policy and consumer welfare is whether the ads influence the beliefs of smokers. Thus, to address potential differences, a 3 X 2 X 6 mixed analysis of variance was performed in which smoking status was added as a third between subjects factor with beliefs again serving as the within-subjects measure. Consistent with prior literature (Netemeyer et al. 2005; Tangari et al. 2007), smokers were defined as those smoking cigarettes in the past thirty days and having smoked 100 cigarette or more in their life.

Findings show main effects of ad condition (F=6.8, p<.01), smoking status (F=15.5, p<.01), belief theme (F=23.9, p<.01) and significant interactions between the beliefs and ad condition (F=2.7, p<.01), and beliefs and smoking status (F=2.6, p<.05). As can be seen in Figure 3, the interaction plot

Figure 3

Differences in Belief Themes between Current Smokers and Nonsmokers



between beliefs and ad condition is very similar to the plot in Figure 1.

All belief means for smokers are at least slightly less than the corresponding belief means for nonsmokers. However, it is also apparent that there is a much greater difference in the belief concerning the deceptiveness of tobacco companies. For this belief, smokers' mean level is substantially below that of the nonsmokers (F=15.9; p<.01).

Effects of the Ads on Perceived Intentions to Quit Smoking

While no specific predictions are offered on advertising effects on intentions, from a public policy and health perspective, it is obvious that effects on smoking intentions and behavior are of interest. Given this fact, results for additional intentions and "desire to quit" variables for smokers only were explored. An analysis of variance was performed with dependent variables of intent to smoke one year from now, intent to smoke five years from now, and the desire to quit smoking. Results showed that ad exposure has no significant effect on the dependent variables. However, our sample size of smokers is very small (n=36) in this analysis.

Conclusions and Recommendations

The primary motivation for this research is the recent Final Judgment and Remedial Order of Judge Kessler which, if upheld, will require that major tobacco companies implement a multi-million dollar corrective advertising campaign (US vs. Philip Morris USA Inc. 2006). Due to the past deceptive practices and marketing of the tobacco companies, this integrated marketing campaign would be used in attempts to change specific beliefs for which consumers may have been deceived in the past. Multi-item measures for each of the belief themes identified in US vs. Philip Morris USA were developed and initially assessed in a pilot study, and the development of these reliable scales is one primary contribution of this research. These measures were then employed in the subsequent main study, in which the effects of two versions of a print advertisement (which was submitted to the Court for use as a possible corrective ad in this litigation) were tested using a mixed experimental design. Thus, in accord with this Court judgment, advertising copy test principles were used to gauge how a corrective ad, such as the one recommended to the court, would affect the focal consumer beliefs identified in the litigation and confidence in these beliefs.

As predicted in H1 and H2, there was a significant effect of exposure to the corrective ad (compared to a control group not exposed to the ads), but that the strength of this effect varied across the different beliefs. In particular, exposure to the corrective ad made consumers less likely to believe that there are health benefits from smoking light and low tar cigarettes.

The predictions in H4 to H6 concerned effects on consumers' confidence in their beliefs, constructs of interest

in prior research in both marketing and psychology (Fazio and Zanna 1978; Marks and Kamins 1988). There was a significant effect of exposure to the ads, and the strength of this effect varied across different beliefs. These findings offered support for H4 and H5.

H3 and H6 predicted the use of graphic visuals in the ads, similar to those used on cigarette packages in Canada and Australia, would increase the overall strength of effects on the belief themes and belief confidence, respectively, compared to corrective ads not using visuals. For the belief themes, the results showed significant differences for health effects, addictiveness, and secondhand smoke. For respondents' confidence in their beliefs, results showed that the inclusion of a graphic visual to the corrective ad only had a significant increase for confidence related to health beliefs. Therefore, the findings for the addition of graphic visuals offered mixed results.

There are several implications of these findings that are relevant to *US vs. Philip Morris USA Inc.* (2006) and the recent ruling of Judge Kessler. The copy test findings of this research show that consumers' beliefs about smoking, in general, can be affected in a manner consistent with the objectives of the Court. Specifically, the exposure to the corrective advertisement had the strongest effect on the low tar and light belief theme, and significant effects on addictiveness beliefs, cigarette manipulation beliefs, and the health-related beliefs.

However, it should be noted that, although some of the belief themes were significantly affected by the corrective ads, many of the mean levels for these belief themes were already high. For example, for the control group not exposed to the corrective ads, means were above 6.0 for both healthrelated belief and secondhand smoke effects, and all means for beliefs are significantly above the neutral scale midpoint of '4' (p<.01). These results are consistent with those of the pilot study, where no ads were used. Despite past misleading actions and marketing tactics from the tobacco companies, these consumers do not appear to have strong levels of inappropriate beliefs about smoking and its consequences. Therefore, even though some beliefs show increases from the ad exposure, they may not be strongly affected because the respondents indicated such high mean levels in both beliefs and confidence already. Also, as shown in Figure 3, while the beliefs of current smokers are somewhat lower than nonsmokers, they also are above the scale midpoint. For smokers, beliefs about deceptiveness of the tobacco companies, health effects of secondhand smoke, and the low tar/light cigarette health benefits appear to offer the most substantial opportunity for positive changes.

Across all the study participants, it might be argued that the one belief in which there was some level of misperceptions or deception was related to the health benefits of low tar and light cigarettes. This is consistent with prior

literature that suggests some consumers have perceived health benefits of low tar and light cigarettes in the past (Kropp and Halpern-Felsher 2004; Kozlowski et al. 1998). Results found in this research show that this belief theme could be made stronger and confidence levels could increase through the use of a corrective advertising campaign. Thus, it might be argued that the most effective approach may be to weight any corrective campaign toward this low tar and light belief theme where the opportunity to 'correct' consumer misperceptions appears to be the most substantial. The campaign, however, could also continue to focus on other important beliefs identified in *US vs. Philip Morris USA, Inc.*, which clearly have implications for consumer welfare.

This study also assessed whether respondents' intentions to quit smoking were affected by corrective advertisements. Results showed that ad exposure had no significant effect on variables associated with smokers' intentions to quit. However, since the sample size only consisted of thirty-six smokers, larger sample sizes may provide a stronger test for these intentions variables.

Limitations and Future Research

There are several limitations of the research that may affect the generalizability of the findings. In this study, respondents only saw one sample advertisement (which was proposed to the Court as a possible corrective ad), either with or without graphic visuals. Other corrective advertisements could be used to test the same hypotheses, which may result in different findings. Additionally, as in most copy test advertising research, the research was conducted in a setting that differs from ad exposure in the natural environment. Results could differ if respondents saw the advertisements in more realistic conditions.

As mentioned above, a larger sample of smokers would provide stronger tests of possible effects on intentions to quit smoking and provide a better gauge of the effects of a corrective advertising campaign on the smoking population. Also, the sample consisted of university students. While this is one important target market for smoking research, future research should be extended to younger adolescents as well as older adults in the general public. In sum, further research to enhance the external validity of the findings should include broader samples, more practical ad exposure conditions, and use of different media rather than just print advertisements. Each of these would help extend results of this thesis research.

References

Armstrong, Gary M., Metin N. Gurol, and Frederick A. Russ (1979), "Detecting and Correcting Deceptive Advertising," *Journal of Consumer Research*. 6 (December). 237-246.

Centers for Disease Control and Prevention (2005), "Facts on Quitting Smoking, Health Consequences of Smoking, & Other Related Information," (accessed on January 20, 2007), [available at: http://www.cdc.gov/tobacco/news/

- HealthConsequences.htm#consequences].
- Etter, Jean-Francois, Lynn T. Kozlowski, and Thomas V. Perneger, (2003), "What Smokers Believe about Light and Ultralight Cigarettes," Preventive Medicine, 36 (1), 92-98.
- Fazio, Russell H. and Mark P. Zanna (1978), "On the Predictive Validity of Attitudes: The Roles of Direct Experience and Confidence, Journal of Personality 46 (2), 228-243.
- Hammond, Dave, Geoffrey T. Fong, Paul W. McDonald, K. Stephen Brown, and Roy Cameron (2004), "Graphic Canadian Cigarette Warning Labels and Adverse Outcomes: Evidence from Canadian Smokers," American Journal of Public Health, 94 (August), 1442-45.
- Kees, Jeremy, Scot Burton, J. Craig Andrews, and John Kozup (2006), "Tests of Graphic Visuals and Cigarette Package Warning Combinations: Implications for the Framework Convention on Tobacco Control," Journal of Public Policy & Marketing, 25 (Fall), 212-223.
- Kozlowski, Lynn T., and Janine L. Pillitteri (2001), "Beliefs about "Light" and "Ultra Light" Cigarettes and Efforts to Change Beliefs: An Overview of Early Efforts and Published Research," Tobacco Control, 10 (4), 12-16.
- Kozlowski, Lynn T., Marvin E. Goldberg, Berwood A. Yost, Erica L. White, Christine T. Sweeney, and Janine Pillitteri, (1998), "Smokers' Misperceptions of Light and Ultra-Light Cigarettes May Keep Them Smoking," American Journal of Preventive Medicine, 15(1), 9-16.
- Kropp, Rhonda Y., and Bonnie L. Halpern-Felsher, (2004), "Adolescents' Beliefs About the Risks Involved in Smoking "Light" Cigarettes," Pediatrics, 114 (4), e445-
- Mallesons Stephens Jaques (2005), "Intellectual property update-Autumn 2005: Corrective advertising," (accessed on March 20, 2007), [available at: http:// www.mallesons.com/publications/Intellectual_Property/ 7850794w.htm]
- Maronick, Thomas J. (1991), "Copy Tests in FTC Deception Cases: Guidelines for Researchers," Journal of Advertising Research, December, 9-17.
- Netemeyer, Richard G., J. Craig Andrews, and Scot Burton. (2005), "Effects of Antismoking Advertising-Based Beliefs on Adults Smokers' Consideration of Quitting," American Journal of Public Health 95 (6): 1062-1066.
- Nunnally, Jum C. and Ira H. Bernstein (1994), Psychometric Theory, 3d ed. New York: McGraw-Hill.
- Petty, Richard E., Pablo Brinol, and Zakary L. Tormala (2002), "Thought Confidence as a Determinant of Persuasion: The Self-Validation Hypothesis," Journal of Personality and Social Psychology, 82 (5), 722-41.
- Tangari, Andrea, Scot Burton, Rick Netemeyer and Craig Andrews (2007), "How Do Anti-Tobacco Campaign Advertising and Smoking Status Affect Beliefs and Intentions? Some Similarities and Differences Between

- Adults and Adolescents," Journal of Public Policy & Marketing.
- United States of America v. Philip Morris USA, Inc. (2006), Civil Action No. 99-2496 (GK), Order #1015 (Final Judgment and Remedial Order) (U.S. District Court). (August 17).
- Wilkie, William, Dennis McNeill and Michael Mazis (1984), "Marketing's 'Scarlet Letter': The Theory and Practice of Corrective Advertising," Journal of Marketing, 48 (Spring),11-31.
- World Health Organization (2006), "The Tobacco Industry Documents: What They Are, What They Tell Us, and How to Use Them," (accessed August 16, 2006), [available at http://www.who.int/tobacco/ communications/TI manual content.pdf].

Mentor Comments

Dr. Scot Burton describes the significance of Ms. Plack's research on cigarette advertising, praising her ability to juggle many aspects of her life while conducting this thesis project.

I am very pleased to have had the opportunity to supervise Brooke's work on a research project focusing on a recent case involving potential consumer deception and a federal judge's order regarding an extremely large corrective advertising campaign. As part of the ruling in US v. Philip Morris USA Inc. (2006), tobacco companies were ordered to make corrective statements concerning the health risks of smoking and secondhand smoke and their deceptive practices through newspaper and television advertising and on cigarette packaging. Brooke's thesis focused on initial tests of corrective print ads submitted to the Court in the case and their potential effects on the specific consumer beliefs identified in the case.

Her thesis research took Brooke into areas of law and the justice system, measurement theory, complex experimental designs, and statistics that often extended beyond her course work as an undergraduate student. I was extremely impressed with Brooke's high energy level, willingness to learn new concepts, and her level of curiosity throughout the various stages of her thesis. The results of her research have intriguing implications not only for this specific case, but potentially for the counteradvertising and public policy literatures, in general. As the head cheerleader at the University of Arkansas, Brooke had many demands on her time, and she had to balance the requirements of her thesis and other Honors coursework with extracurricular activities involving out-of-town games and SEC and NCAA tournaments. Her exemplary organizational and planning skills served her very well on this challenging project, and these attributes will help her in all of her post-graduation endeavors. Brooke also is highly motivated and self-disciplined, and she is a

very quick thinker who has excellent communication skills. I believe that she has an extremely bright future. I commend Brooke for her outstanding effort and work throughout her thesis project.

Appendix A

Reliabilities and Multi-Item Belief Measures: Pilot and Main Study

Health effects (pilot test $\alpha = .91$; main study $\alpha = .85$):

- 1) Cigarette smoking causes lung cancer.
- 2) It is not likely that regular cigarette smoking will lead to heart disease.*
- 3) Cigarette smoking affects respiratory health and causes diseases such as emphysema.
- 4) Cigarette smoking is **not** related to the chance of stroke.*
- 5) Smoking by pregnant women increases the risks for fetal injury, premature birth, and low birth weight.
- 6)In general, smokers are no more likely to develop serious diseases, like lung cancer or heart disease, than non-smokers.*
- 7) Cigarette smoking causes many diseases, including lung cancer, several other cancers, coronary heart disease, and several respiratory diseases and conditions.
- 8) In general, smokers are as healthy as non-smokers.*

Addictiveness (pilot test $\alpha = .76$; main study $\alpha = .75$):

- 1) Smoking is addictive.
- 2) Nicotine is physically addictive.
- 3) Cigarettes and other forms of tobacco are not addicting.*
- 4) Pharmacology and behavioral characteristics that determine tobacco addition are comparable to the determinants of addiction to such drugs as heroin and cocaine.
- 5) Nicotine is a drug that causes addiction to tobacco.

Low Tar and Light cigarettes (pilot test $\alpha = .91$; main study $\alpha = .93$)*

- 1) It is safer to smoke "low tar," "light," "ultra light," "natural," and "mild" cigarettes than it is regular brands.
- 2) Compared to regular cigarette brands, there are definite health benefits from smoking "low tar," "light," "ultra light," "mild," or "natural" cigarettes.
- 3) Compared to regular cigarette brands, "low tar," "light," "ultra light," and "mild" cigarettes reduce the chance of diseases related to smoking.
- 4) Smoking cigarettes with lower tar and nicotine levels provides benefits to health over smoking regular cigarettes.
- 5) Smoking cigarettes with lower tar and nicotine levels are safer to one's health than are regular cigarettes.
- 6) Light cigarettes are less harmful than regular cigarettes.
- 7) Smokers of light cigarettes take in less tar than smokers of regular cigarettes.
- 8) People smoking a cigarette labeled "light" will absorb just as much or more tar, nicotine, and carbon monoxide as when smoking a regular cigarette

Tobacco companies and cigarette manipulation (pilot test $\alpha = .87$; main study $\alpha = .82$)

- 1) Tobacco companies manipulated the design of their cigarettes to increase consumers' addiction.
- 2) I do <u>not</u> believe that tobacco companies purposely designed cigarettes so that they provide an addictive
- 3) Tobacco companies control the amount and form of nicotine delivery in their cigarettes.
- 4) Tobacco companies did <u>not</u> intentionally influence the level of nicotine received from smoking cigarettes.*
- 5) Tobacco companies have manipulated cigarettes to make them more addictive.

Second-hand smoke (pilot test $\alpha = .88$; main study $\alpha = .92$)

- 1) Breathing smoke from someone else's cigarette is harmful.
- 2) Second hand smoke is dangerous to nonsmokers
- 3) Second hand smoke is **not** as dangerous as people make it out to be.*
- 4) Secondhand smoke kills people.
- 5) Exposure to second-hand smoke does **not** cause lung cancer in non-smokers.*
- 6) Exposure to second-hand smoke can cause heart disease in non-smokers.
- 7) Secondhand smoke does **not** cause disease and poor health in children.*
- 8) In children, secondhand smoke damages the lungs and causes sudden infant death syndrome (SIDS), respiratory and ear infections, and more severe asthma.

Tobacco Company Deceptiveness (pilot test $\alpha = .93$; main study $\alpha = .91$):

- 1) Tobacco companies try to get young people to start smoking.
- 2) Tobacco companies mislead young people into believing smoking is okay.
- 3) Tobacco companies mislead consumers on the effects of smoking on their health and others around them.
- 4) Tobacco companies use deceptive advertising and promotion to influence the perception of smoking to seem "cool" and "socially desirable."
- 5) Tobacco companies encourage people to start smoking.
- 6) Tobacco companies have used deceptive practices to get people hooked on smoking.

Appendix B

Condition 2 (copy only)

For decades, we deliberately misled the American Public about the health effects of smoking. A Federal District Court is requiring us to make this statement:

We told you that smoking and secondhand smoke were not dangerous and that smoking was not addictive. We falsely marketed "light" and "low-tar" cigarettes as less harmful than regular cigarettes to keep smokers from quitting-even when we knew they were not.

Here's the truth:

- Smoking kills 1200 Americans every day from cancer, heart attacks, and many other illnesses. It damages almost every organ in the body.
- Smoking is very addictive and therefore very hard to quit. We even manipulated cigarettes by adding things like ammonia to make them more addictive.
- There is no health benefit from smoking "light," "low-tar," "ultra-light," "mild "or "natural cigarettes.
- Secondhand smoke is a proven cause of cancer, heart attacks, and other illnesses. It kills more than 38,000 Americans each year.

^{*} These items are reverse coded. All the low tar and light cigarette items are reverse coded in order to make their direction consistent with the other belief theme items.

[&]quot;Paid for by Philip Morris under order of a Federal District Court."

Appendix C

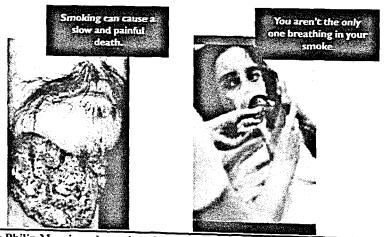
Condition 3 (copy with images)

For decades, we deliberately misled the American Public about the health effects of smoking. A Federal District Court is requiring us to make this statement:

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"Paid for by Philip Morris under order of a Federal District