

Mistrusting Companies, Mistrusting the Tobacco Industry: Clarifying the Context of Tobacco Prevention Efforts That Focus on the Tobacco Industry*

JAMES F. THRASHER

University of South Carolina, Columbia

CHRISTINE JACKSON

Pacific Institute for Research and Evaluation

Journal of Health and Social Behavior 2006, Vol 47 (December): 406–422

Campaigns to prevent adolescent smoking increasingly depict the tobacco industry as deceitful and exploitative. This study was undertaken to determine how adolescents' expectations about the trustworthiness of companies, in general, influence the pathway through which anti-tobacco industry campaigns prevent smoking. Structural equation modeling was used with survey data from 6,670 adolescents, ages 12 to 17. In the first model, statistically significant coefficients were associated with paths from mistrust of companies to mistrust of the tobacco industry, from mistrust of the tobacco industry to anti-tobacco industry attitudes, and from anti-tobacco industry attitudes to smoking. In models stratified by mistrust of companies, paths from mistrust of the tobacco industry to anti-tobacco industry attitudes and from anti-tobacco industry attitudes to smoking appeared comparable among youth with both high and low mistrust of companies. These results suggest that anti-tobacco industry campaigns resonate with youth because of youths' trust-related values and expectations.

Increasingly, mass media campaigns that focus on the deceitful practices of the tobacco in-

dustry have been used to discourage youth from smoking in the United States (Farrelly et al. 2005; Goldman and Glantz 1998; Niederdeppe, Farrelly, and Haviland 2004). These anti-industry campaigns reframe the meaning of smoking to include an image of the tobacco industry as deceitfully manipulating smokers into consuming a deadly product. Because they call attention to the untrustworthiness of the tobacco industry, we suggest that a better understanding of why this kind of campaign strategy works may come from attending to youths' general mistrust of companies and their practices. In particular, we suggest that this predisposition to mistrust companies, in general, influences youths' attitudes about the tobacco industry, and, ultimately, their smoking behavior. Illumination of these relationships aims to contextualize anti-industry cam-

* The authors would like to thank Kenneth Bollen, Susan Ennet, Kurt Ribisl, Matthew Farrelly, and Jeff Niederdeppe for their thoughtful commentary on this project and on early drafts of this manuscript. We also thank the American Legacy Foundation for providing access to the data upon which this article is based. The analysis and content of this article are solely the work of the authors. This study was supported in part with funding from the University of North Carolina, Lineberger Cancer Control Education Program (R25-CA057726) and The University of Illinois at Chicago Cancer Center, Cancer Education and Career Education Program (#5 R25-CA57699). Address correspondence to James F. Thrasher, Department of Health Promotion, School of Public Health, University of South Carolina, Columbia, SC 29208 (email: thrasher@gwm.sc.edu).

paigns as reflecting trends related to mistrust within contemporary society.

ANTI-INDUSTRY CAMPAIGNS, EVIDENCE FOR THEIR EFFICACY, AND THE MECHANISMS BY WHICH THEY WORK

Counteradvertisements that aim to prevent tobacco use and promote cessation in the United States have increasingly focused on the deceitful practices of the tobacco industry. The first ad in the anti-industry genre, for instance, depicted industry executives sitting in a boardroom, gleefully concocting ways to entice new smokers to consume their dangerous product. Some ads describe how tobacco companies manipulate tobacco products, for example, by adding ammonia to cigarettes to make them more addictive. Other ads lay responsibility for the consequences of tobacco consumption at the industry's doorstep, as in one ad that showed youths piling up hundreds of body bags outside the headquarters of a major tobacco company in order to signify the daily death toll from smoking. These and other anti-industry messages depict the tobacco industry as devious, unethical, and liable to do almost anything to sell its deadly, addictive product.

Evidence for the efficacy and mechanisms through which anti-industry ads work comes from three statewide campaigns and from the national "truth[®]" campaign. In the early 1990s, advertising agencies helped devise the industry focus as one of a variety of message types aired in the California mass media tobacco prevention campaign (Pierce, Emery, and Gilpin 2002; Reid 2005). Soon thereafter, Massachusetts included anti-industry ads in its statewide anti-smoking campaign, which, as in California, appeared to account for subsequent reductions in smoking (Siegel and Biener 2000). Focus group data from both states indicated the appeal of anti-industry ads for adults and youth alike, leading some researchers to claim that the "harder-hitting" anti-industry ads in California accounted for the steeper decline in tobacco consumption there (Goldman and Glantz 1998). Indeed, some have suggested that anti-industry ads must be effective in preventing smoking because the tobacco industry has lobbied so hard to have these ads removed from anti-smoking campaigns (Balbach and Glantz 1998). Nevertheless, data from California and Massachusetts do not distinguish the impact of anti-industry ads from the

impact of ads with different content (e.g., hazards of environmental tobacco smoke) that were also used in these campaigns.

Stronger evidence for the particular impact of anti-industry ads among youth comes from the Florida and national "truth" campaigns. In 1998, Florida developed a youth-targeted campaign that almost exclusively focused on the tobacco industry. One year after the onset of this campaign, current smoking and smoking intentions among Floridian adolescents had declined by 8 percent and 33 percent, respectively. In the rest of the United States, the corresponding percentages had increased by 12 percent and decreased by 1 percent, respectively (Sly, Heald, and Ray 2001).

The apparent success of the Florida campaign inspired the American Legacy Foundation to use the anti-industry approach in its national youth campaign, which began in 2000. With a budget of \$100 million a year and countrywide media purchases, no mass media anti-smoking effort had occurred at this scale since the late 1960s. Nationwide exposure to this campaign has been high, with 72 percent of youth reporting recent viewing of a truth ad soon after the start of the campaign (Farrelly et al. 2002), while an average of 52 percent reported recent exposure during the period from 2000 to 2003 (Thrasher et al. 2004). To assess the behavioral impact of the national campaign, Farrelly et al. (2005) used data from before the campaign launch to estimate what youth smoking trends would have been like in the absence of the truth campaign. They concluded that 22 percent of the observed decline in adolescent smoking from 2000 to 2002 appeared to be attributable to the campaign. Other studies indicate more specifically how exposure to anti-industry ads influences youth smoking.

Anti-industry campaigns may prevent smoking by promoting an image of not smoking as rebellious and "cool," thereby decreasing the social acceptability of smoking (Evans et al. 2003); however, the primary mechanism by which these campaigns work appears to be through fostering negative attitudes and beliefs about the tobacco industry (Hersey et al. 2005). Concomitant with the decline in youth smoking after the onset of the Florida truth campaign, negative attitudes about the industry rose significantly among adolescents in Florida but not in the rest of the United States (Sly et al. 2001). Once the national truth cam-

paign began, however, anti-industry attitudes began to increase among adolescents across the United States (Farrelly et al. 2002; Thrasher et al. 2004). Furthermore, self-reported exposure to anti-industry ads has been associated both with stronger anti-industry attitudes and with lower levels of smoking involvement in Florida (Niederdeppe et al. 2004) and across the United States (Farrelly et al. 2002; Hersey et al. 2005). Finally, in a 22-month cohort study of Floridian adolescents, nonsmokers who reported exposure to anti-industry ads at follow-up were more likely have stayed nonsmokers than those who did not report seeing ads (Sly, Trapido, and Ray 2002). These results may be explained by selective attention or differential exposure across smoking risk groups. Nevertheless, as a whole, these studies support the contention that anti-industry messages prevent youth smoking by increasing negative attitudes and beliefs about the tobacco industry.

SOCIAL MARKETING, FRAME RESONANCE, AND MISTRUST

The anti-industry approach to smoking prevention reflects, in part, the increasing incorporation of social marketing approaches into public health campaigns (Eisenberg et al. 2004; Jacobson et al. 2001; Reid 2005). As such, the origination and elaboration of anti-industry ads described above followed from the growing consensus that public health campaigns are more likely to be successful if they address the core values and beliefs of the audience they are trying to influence (Kottler, Roberto, and Lee 2002; Lupton 1994). This aspect of the social marketing orientation parallels sociological discussions of “frame resonance,” a concept used to explain how behavioral or ideological change is motivated (Benford and Snow 2000; Snow and Benford 1988). Frame resonance concerns whether a particular way of framing an idea, a behavior, or a situation is coherent, convincing, and salient for people within a particular sociocultural milieu. In the 1990s, for example, feminist activists in the United States successfully lobbied for increased breast cancer research funding by framing their arguments to address core values of equity, justice, and family (Kolker 2004). Frames resonate—and therefore are more likely to successfully motivate people—when they echo the values, expectations, and identity concerns that people view as relevant to their lives.

Anti-industry ads generally focus on how the industry sells a dangerous product, hides these dangers, and exploits its consumers, all of which may resonate with values and expectations that youth hold with regard to honesty and integrity. Indeed, the current youth generation appears more “integrity-focused” and judgmental of unethical behavior than the more cynical “generation X” that preceded it (Howe and Strauss 1999; Paul 2001). Moreover, contemporary teens list “being honest” as the most important rule for companies to follow when advertising to them (Zollo 2004). Anti-industry ads that focus on the “truth” behind tobacco industry’s duplicitous behavior may evoke this yearning for integrity, offering youths a chance to avoid condoning this behavior through a refusal to consume the industry’s product.

Anti-industry ads may also resonate with preexisting mistrust among youths, creating an image of the tobacco industry as a particularly glaring example of corporate deceit and malfeasance. Late-modern society appears fraught with mistrust of others and of the ability of abstract expert systems, such as the government or the health care system, to effectively manage the present in the hopes of reaching a better future (Beck 1992; Beck 2000; Giddens 1991; Lash 2000). Mistrust of the market system and of corporate motives may be a manifestation of this general mistrust.

Intensive youth exposure to marketing efforts appears to have fostered skepticism and mistrust toward companies. Today’s youth, more than previous generations, are continuously exposed to marketing efforts through cable TV, the Internet, radio, magazines, phones, and even their schools (Howe and Strauss 1999; Voight 2000; Weiss 2003; Zollo 2004). Numerous studies have found that by the time youths reach age 11 or 12, cognitive developments in perspective taking result in low levels of trust in and greater dislike of advertising (Roedder John 1999). In other words, youth gain the ability to attribute and understand the intentions of others, including the intentions of companies that want them to buy their products. As among adults (Kanter and Mirvis 1989), negative assessments of advertising may influence youths’ perceptions of particular companies, as well as of companies in general. As one market researcher put it, “years of intense marketing efforts aimed directly their way have taught this group to assume the worst about companies trying to coax them into buy-

ing something” (cited in Neuborne and Kerwin 1999).

These generalizations about mistrust of corporate practices among youth do not explain any differential effect that mistrust may have in explaining how anti-industry campaigns and the beliefs they engender might influence youth smoking. In this regard, Hardin’s encapsulated interest theory of trust is suggestive, as it addresses some of the theoretical and conceptual ambiguities that characterize much of the contemporary literature on trust (Hardin 2001; Hardin 2002). Hardin criticizes theories based on the general trust of others (Kawachi and Berkman 2000; Putnam 1993; Rotter 1980; Yamagishi 2001) because they assume that people have a general predisposition to trust a variety of social referents. Instead, Hardin stresses how the interaction history between the truster and trustee, the type of action on which the trust is based, and context-specific beliefs influence the perceived trustworthiness of a particular target. This conceptualization allows for individual beliefs to articulate with broader sociocultural trends without homogenizing the influence of these trends. Moreover, Hardin’s theoretical formulation insists that researchers ultimately train their focus on the target of trust—in this case, the tobacco industry—as the most important referent in conceptualizing trust-related decision making.

As a means of reconciling Hardin’s theory with proposed macro-level social trends related to trust, we suggest that youths’ domain-specific perceptions of the general untrustworthiness of companies will directly influence their perceptions of the untrustworthiness of the tobacco industry. Mistrust of the tobacco industry will, by way of its positive influence on anti-tobacco industry attitudes, influence smoking behavior. By examining variation in the strength of expectations around the trustworthiness of companies, we aim to examine the middle ground between general, macro-sociological theories of widespread mistrust and Hardin’s more context-specific formulation.

THE CYNICAL HYPOTHESIS: MISTRUST AS A MODERATOR

The aforementioned hypothesis suggests that mistrust of companies may partly account for why anti-industry messages resonate with youth; namely, because beliefs within this more general domain should be consistent and

correlated with beliefs about the tobacco industry. Alternatively, mistrust of companies may moderate the associations among mistrust of the tobacco industry, anti-industry attitudes, and smoking. Attitude characteristics (e.g., accessibility, temporal stability), personality characteristics (e.g., self-monitoring), perceived control over the behavior (e.g., self-efficacy), and subjective norms around the behavior (e.g., perceptions of the approval or disapproval of the behavior by significant social others) have all been found to moderate the relationship between attitudes and behavior (Cooke and Sheeran 2004; Krosnick and Petty 1995; Petty and Wegener 1998; Umeh and Patel 2004). Generalized beliefs about the system within which the tobacco industry operates may modify this relationship, as well.

Youths’ general beliefs about the untrustworthiness of companies are likely to reflect their perceptions of market-system norms. Youth who generally believe that companies are trustworthy may have relatively higher expectations for the trustworthiness of any particular company than youth with greater mistrust of companies. When high expectations of a particular referent like the tobacco industry, more trusting youth may respond with both stronger anti-industry attitudes and a greater likelihood of refusing to consume the product made by that industry. On the other hand, youth with stronger mistrust of companies may cynically view the tobacco industry as untrustworthy and may perceive its behavior as consistent with the deceitful norms among corporations that aim to sell their products in order to make money. As a result, the relationships among perceived trustworthiness of the tobacco industry, anti-industry attitudes, and smoking would be relatively weaker among these more untrusting and cynical youth. Hence, general mistrust of companies would modify both the relationship between perceived trustworthiness of the tobacco industry and anti-industry attitudes and the relationship between anti-industry attitudes and smoking.

HYPOTHESES

Three primary hypotheses emerge from the above literature review. First, mistrust of the tobacco industry will positively influence anti-tobacco industry attitudes, which, in turn, will negatively influence intent to smoke and actual smoking. Second, mistrust of companies will

positively influence mistrust of the tobacco industry, which will negatively influence smoking involvement through its impact on anti-industry attitudes. Alternatively, mistrust of companies will moderate the key study relationships. In particular, the influence of mistrust of the tobacco industry on anti-tobacco industry attitudes will be weaker among youth with high mistrust of companies than among youth with low mistrust of companies. Furthermore, the relationship between anti-industry attitudes and smoking involvement will be weaker among youth with high mistrust of companies than among youth with low mistrust of companies.

METHODS

Data Source and Sample Characteristics

We tested the study hypotheses using data from the spring and fall 2003 Legacy Media Tracking Surveys (LMTS), two cross-sectional surveys designed to evaluate the national "truth" campaign. The surveys used a two-stage stratified survey design to ensure that the sample was nationally representative of youths ages 12 to 17. Approximately half of the sample was contacted by telephone using random-digit dialing, while the other half was randomly selected from lists used to oversample minority youth and youth who lived in four states with contemporaneous state-sponsored anti-smoking campaigns (California, Florida, Minnesota, and Mississippi). All surveys were telephone-administered in English after receiving verbal consent from parents. Interviewers who spoke Spanish were used to obtain consent from Spanish-speaking parents. Telephone calls were spread across all days of the week and times of day, especially evenings and weekends, to increase chances of finding adolescents and their parents at home. Up to 12 callback attempts were made for each case, with at least two of these callbacks occurring during the daytime. Moreover, unless a respondent or parent was adamant about not participating in the survey, up to two refusal-conversion attempts were made per case.

Using the American Association of Public Opinion Research calculation number 4 (American Association of Public Opinion Research 2004), the response rates for the spring and fall LMTS administrations were estimated at 43 percent and 30 percent, respectively. Of the 6,913 12–17 year-old adolescents who responded, the 6,670 (96%) who had full

information on the variables of interest comprised the analytic sample for this study. Males ($n = 3,361$) and females ($n = 3,309$) were almost equally represented, and 53 percent identified themselves as white ($n = 3,552$). Youth who identified as African American or Hispanic each accounted for about 17 percent of the sample ($n = 1,131$ and $n = 1,163$, respectively), whereas 8 percent identified as Asian ($n = 549$) and 4 percent identified as from different ethnic backgrounds ($n = 270$). The mean age of the sample was 14.5 years old, with an approximately uniform distribution of youth across age categories from 12 to 17 (range $n = 1,102$ to 1,278). About 60 percent of the sample had never smoked and were not susceptible to smoking ($n = 3,983$), and 19 percent had never smoked but were susceptible to smoking ($n = 1,296$). Fourteen percent of the sample ($n = 932$) had tried smoking but had not smoked in the last 30 days, while 4 percent were experimental smokers ($n = 250$) and 3 percent were regular smokers ($n = 209$). Friend smoking followed a similar pattern: 69 percent of participants had no good friends who were smokers ($n = 4,600$); lower percentages had one ($n = 897$), two ($n = 557$), three ($n = 297$), or four or more ($n = 319$) good friends who smoked.

Measures

Smoking involvement. The items used to measure smoking status have been validated and used to measure smoking in other studies of adolescent populations (Flay, Hu, and Richardson 1998; Pierce et al. 1996). These include one item asking whether one had ever smoked ("Have you ever smoked cigarettes, even a puff?"), as well as three items on smoking susceptibility ("Do you think you will smoke a cigarette soon?"; "Do you think you will smoke a cigarette in the next year?"; "If one of your best friends offered you a cigarette, would you smoke it?"). As has been done in other studies (Pierce et al. 1996), those who had never smoked and who responded with anything but "definitely not" to the susceptibility questions were coded as susceptible. Participants who had tried smoking were classified at one of three levels of current smoking involvement: noncurrent (no cigarette in the last month); experimenter (smoked in the last month, but less than 100 lifetime cigarettes); and regular smoker (smoked in the last month and smoked more than 100 lifetime cigarettes).

The resulting ordinal smoking involvement variable reflected the range of categories used in most studies of youth smoking. Nevertheless, treating smoking involvement as a five-level ordinal variable differs from standard approaches that use the above measures to derive dichotomous outcomes (e.g., susceptible vs. not susceptible; ever smoked vs. never smoked). Some researchers have justified the use of dichotomous smoking outcomes by referencing theories of smoking uptake that posit different risk factors coming into play at different transitions to greater smoking involvement (CDC 1994). However, meta-analyses have not supported this contention, finding no distinctive impact of risk factors across smoking involvement (Mayhew, Flay, and Mott 2000).

Mistrust of companies and mistrust of the tobacco industry. Items measuring mistrust of companies and of the tobacco industry reflected a definition of untrustworthiness as the uncertainty ascribed to a referent, such that this referent would be likely to take one's interests into account in a cooperative interaction (Gambetta 1988; Hardin 2001). This definition is consistent with standard theories of economic decision-making under risk, providing a particular focus on the subjective probability of exploitation through commodity consumption (Bolle 1999). Item content for both constructs reflected perceptions of general honesty (e.g., "cigarette companies lie"), hiding dangers related to product consumption (e.g., "companies often lie about the dangers of their products"), concern for consumers (e.g., "companies care about the people who buy their products"), and the primary concern with maximizing profits (e.g., "cigarette companies only care about making a lot of money").

Anti-tobacco industry attitudes. Theories of persuasive communication (Jackson 1997; Petty and Wegener 1998) and of consumer behavior (de Mooij 2004) emphasize how attitudes provide the key link between beliefs and behavior. Beliefs are foundational to attitudes; however, attitudes also encompass how positively or negatively one perceives a particular referent, highlighting the evaluative dimension that may be implied, but not necessarily captured, by beliefs. For instance, according to the Theory of Reasoned Action (TRA)—which is widely used in both studies of health behavior (Montano, Kasprzyk, and Taplin 1997) and economic psychology (de Mooij 2004; Lunt

1995)—attitudes toward a behavior are conceptualized as mediating the influence of beliefs on behavior. Following these theoretical orientations, we conceptualized anti-tobacco-industry attitudes as reflecting evaluations of the tobacco industry as relatively good or bad. Items addressed evaluative sentiment toward the industry (e.g., "I feel angry with tobacco companies"), evaluation of the respondent's feelings about the industry going out of business ("I would like to see cigarette companies go out of business"), and evaluation of possible identification and collaboration with the industry through work ("I would not work for a cigarette company"). Items measuring mistrust of the tobacco industry may have also implied an evaluative dimension, but the content of those items was squarely focused on industry practices, while the attitudinal items addressed more personal evaluations of the industry. Indeed, previous research has shown the distinctiveness of tobacco industry attitudes and beliefs (Hersey et al. 2003).

Control variables. The existing literature on smoking among youth suggests that age, sex, race/ethnicity, and friends' smoking behavior should be considered as control variables in this study (American Legacy Foundation 2002; Centers for Disease Control and Prevention 1994, 2001; Tyas and Pederson 1998). For analysis purposes, race/ethnicity was recoded to a set of dummy variables, with white youth as the reference group for each other ethnic group (i.e., African American, Latino, Asian, Other). The measure for the number of good friends who smoke was maintained in its original, ordinal response format (0, 1, 2, 3, 4 or more).

Data Analysis

All analyses involved latent variable structural equation modeling (SEM), treating all variables as ordinal (Bollen 1989; Joreskog and Sorbom 1996). Mplus software (Muthén and Muthén 2004), version 3.11, was selected because of its capacity to estimate latent variable models with ordinal observed variables. SEM with ordinal variables is similar to ordinal logistic regression approaches that are more common in smoking research (Mayhew et al. 2000); however, SEM has the advantage of permitting measurement error in covariates and the use of multiple ordinal indicators for latent variables. As is standard for SEM with ordinal data, the diagonally weighted least

squares (DWLS) algorithm was used to generate parameter estimates. The comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean-square error of approximation (RMSEA) were used to judge overall model fit. CFI and TLI values above .90 and RMSEA values lower than .08 were viewed as minimally acceptable (Bentler 1990; Hu and Bentler 1999). Chi-square difference tests were used to compare models with the same structural form but with different constraints on parameters (Bollen 1989). Statistically significant chi-square difference tests were used to indicate whether the more constrained model (i.e., the more parsimonious model) provided a significantly worse fit to the data than the less constrained model. As is common practice, the less parsimonious, less constrained model was selected as the better fitting model in case of a statistically significant result. Otherwise, the more parsimonious model was selected. All analyses adjusted for sampling strata and weights (Asparouhov 2004a; Asparouhov 2004b).

Analysis began with an examination of each latent variable within the SEM confirmatory factor analysis framework. After satisfactory measurement properties were established, we examined bivariate associations between primary study variables and the control variables within the latent variable framework. Next, structural models representing hypotheses were specified and model parameters estimated. Subsequent models adjusted for the influence of control variables on all latent variables of interest, and nested tests were done to assess whether the elimination of insignificant paths reduced model fit. If the results indicated adequate fit of the model to the data, path estimates were examined for support or rejection of study hypotheses. Hypothesis tests of modification were done by running separate models for groups defined by levels of the modifying variable (i.e., mistrust of companies). Confidence intervals around the estimated coefficients of interest were examined for evidence of overlap or distinctiveness of the estimates across groups. Consistent increases or decreases in the strength of the coefficients across levels of the hypothesized modifying variable were taken as evidence for modification.

RESULTS

Confirmatory Factor Analysis

Confirmatory factor analyses were run for each of the multi-item constructs. The items measuring mistrust of companies and mistrust of the tobacco industry had reasonable factor loadings and r-squares, and the models provided a good fit to the data (CFI = .99, TLI = .98, RMSEA = .05; and CFI = .98, TLI = .99, RMSEA = .02, respectively). When assessing anti-tobacco industry attitudes, the overall fit indices were good (CFI = .99; TLI = .99; RMSEA = .03); however, the parameter estimates associated with one item—"Cigarette companies get too much blame for young people smoking"—had an unacceptably low loading ($l = .22$) and r-square (5%), so it was eliminated. Measurement models were then run to assure adequate fit when all latent variables were considered together. In particular, we addressed concerns about correlated measurement error due to similar item wording across constructs. In the measurement model with error terms for the two general honesty items correlated across constructs and error terms for the two profit motivation items correlated across constructs, both correlated errors were highly significant, and the fit indices were good (CFI = .96; TLI = .97; RMSEA = .04). When these correlated errors were constrained to be equal to zero, the chi-square difference test indicated a significant decrease in model fit ($\chi^2_{\text{dif}} = 378.91$, $df = 2$), and overall fit indices declined. Hence, subsequent analyses that included both of the mistrust constructs assumed this form.

Despite the use of theory to determine constructs, attempts were made to confirm that the latent variables were distinct from one another. Exploratory factor analysis methods with all attitude and mistrust items suggested the existence of three dimensions (eigenvalues = 3.87, 1.67, 1.18), with some cross-loading of items, mostly for the items with similar wordings. Although the use of such data-driven methods to determine dimensionality are problematic in the absence of theory (Bollen 1989), the results generally supported the theoretical constructs proposed for this study. Since traditional confirmatory factor analysis methods were developed for continuous, normally distributed variables, not ordinal variables, a fuller treatment of the distinctiveness of the study's latent variables was also considered within the SEM framework.

Assessment of construct discrimination involved estimating measurement models that included the two mistrust constructs in one model and, in a different model, the two constructs with the tobacco industry as a referent. A formal nested comparison was done in which a single latent variable was nested within a two-latent-variable model. In other words, the fit of the theorized two-latent-variable measurement model was compared to the fit of a single-latent-variable model whose indicators included all items from the two theorized constructs. Whether considering either the mistrust constructs or the tobacco industry constructs, the results indicated a significantly worse fit for the model that contained only one latent variable ($\chi^2_{\text{dif}} = 229.14$, $df = 1$, $p < .0001$; and $\chi^2_{\text{dif}} = 127.83$, $df = 1$, $p < .0001$, respectively). These results generally confirmed expectations that the items used in this study were best viewed as indicators of three distinct latent variables.

Bivariate Results

The next analytic step involved generating bivariate correlations among primary study variables and between these variables and control variables. With regard to the relationships among latent variables, all correlations were in the direction and relative strength that were expected (see Table 1). For instance, the relationship between smoking involvement and anti-industry attitudes ($r = -.59$) was stronger than for smoking involvement and mistrust of the tobacco industry ($r = -.28$). When viewed alongside the insignificant correlation between smoking involvement and mistrust of companies, these results provided further evidence of

discrimination across two mistrust constructs, despite the otherwise strong correlation between them ($r = .78$). Smoking involvement was also positively correlated with age and number of friend smokers, whereas it was negatively correlated with being black or Asian as opposed to being white. Ethnicity was the only control variable correlated with mistrust of companies, with weaker mistrust among Asian youth than among white youth. As expected, age and number of friends who smoke were inversely correlated with both of the tobacco industry constructs. Finally, males had marginally higher mistrust of the tobacco industry than females. These results were consistent with expectations.

Tests of Primary Study Hypotheses

The first hypothesis concerning the influence of mistrust of the tobacco industry on anti-industry attitudes and anti-industry attitudes on smoking involvement was initially examined in a model that did not include control variables. The model fit was good (CFI = .95; TLI = .96; RMSEA = .05), and, as was found for the bivariate results, the valence and statistical significance of the paths were as hypothesized. Mistrust of the industry explained 65 percent of the variance in anti-industry attitudes ($\gamma = .79$), and anti-industry attitudes explained 29 percent of the variance in smoking involvement ($\beta = -.81$). Thereafter, a baseline-adjusted model was developed in which the above structural relationships were maintained while simultaneously regressing each of these latent variables on age, sex, and ethnicity. Furthermore, friend smoking was treated both as having a direct influence on smoking in-

TABLE 1. Bivariate Correlations between Primary Study Variables and Control Variables

	Primary Study Variables			
	Smoking Involvement	Anti-Tobacco-Industry Attitudes	Mistrust of Tobacco Industry	Mistrust of Companies
Primary Study Variables				
Anti-tobacco-industry attitudes	-.59	—	—	—
Mistrust of the tobacco industry	-.28	.82	—	—
Mistrust of companies	-.04 ^{ns}	.45	.78	—
Control Variables				
Age	.31	-.30	-.14	.04 ^{ns}
Male ¹	.01 ^{ns}	-.04 ^{ns}	.09	.04 ^{ns}
Black ²	-.05	-.01 ^{ns}	.02 ^{ns}	.02 ^{ns}
Latino ²	.01 ^{ns}	-.06 ^{ns}	.02 ^{ns}	.00 ^{ns}
Asian ²	-.10	.01 ^{ns}	.01 ^{ns}	-.06
Other ²	.01 ^{ns}	.01 ^{ns}	.01 ^{ns}	-.00 ^{ns}
Friend smoking	.56	-.42	-.17	.02 ^{ns}

Notes: ns = not statistically significant (i.e., $p > .05$). 1 = compared to female youth; 2 = compared to white youth.

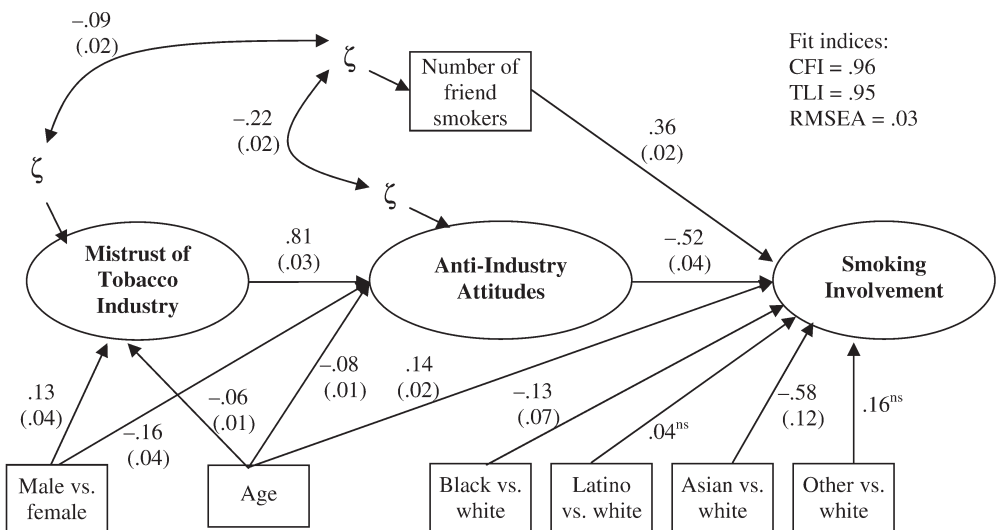
volvement and as correlated with mistrust of companies and of the tobacco industry. This was done because at least part of the friend-associated variability in these constructs is likely due to selection processes, wherein youth selectively affiliate with others who share similar attributes, including risk profiles for smoking (Ennett and Bauman 1994; Urberg, Degirmencioglu, and Pilgrim 1997). In traditional multivariate regression, this specification is essentially how models adjust for variability in smoking due to friend smoking. Fit statistics for this model were reasonable (CFI = .93; TLI = .94; RMSEA = .03), and path estimates between latent variables were relatively comparable to those in the unadjusted model.

Next, a nested comparison was done to determine whether constraining the values for insignificant paths to zero would reduce model fit. The results suggested that the more parsimonious model fit the data as well as the fully adjusted model ($\chi^2_{\text{diff}} = 4.86$, $df = 6$, $p = .56$), and model fit statistics improved slightly (CFI = .96; TLI = .95; RMSEA = .03). In this final model (see Figure 1), the strength of the primary path from mistrust of the tobacco industry on anti-industry attitudes remained strong ($\beta = .81$) while the path from anti-industry attitudes to smoking involvement ($\beta = -.52$) was attenuated from the unadjusted model, but still

relatively strong. Overall, this model explained 46 percent of the variance in smoking involvement.

The next set of hypotheses examined whether mistrust of companies modified the paths of influence in the above model. First, factor scores for the mistrust of companies variable were estimated, and tertile cut-points were used to classify observations as high ($n = 2,188$), average ($n = 2,260$), or low ($n = 2,222$) mistrust. Afterward, group comparison methods were followed within the measurement model framework using both of the tobacco industry-focused constructs. These comparisons aimed to determine the equivalence of latent variable parameters (e.g., thresholds, lambdas) across groups, so that formal statistical testing could be conducted on group differences in other parameters of interest (i.e., paths between latent variables). The first step involved running a single model for all groups, with measurement parameters free to vary across groups. Because there were no hypotheses around the equivalence of particular thresholds or loadings across groups, the second model tested the equivalence of item thresholds across all groups, as is recommended in the literature (Muthén and Asparouhov 2002; Muthén and Christofferson 1981). The results indicated a significantly worse fit to the data, whether

FIGURE 1. Final Model of the Adjusted Influence of Mistrust of the Tobacco Industry and Anti-tobacco-industry Attitudes on Smoking Involvement



Notes: ns = not statistically significant at $p < .05$. CFI = comparative fit index. TLI = Tucker-Lewis index. RMSEA = root mean square error of approximation.

the equality constraints were imposed on the thresholds ($\chi^2_{\text{dif}} = 755.34$; $df = 23$; $p < .0001$) or the lambdas ($\chi^2_{\text{dif}} = 643.47$; $df = 11$; $p < .0001$). These results suggested that the measurement properties of the latent variables under consideration were different enough across groups that statistical tests of the differences in structural parameters relating these variables may not produce meaningful results.

Despite variance in measurement parameters across levels of mistrust of companies, separate models were estimated for each group, and parameter estimates were examined for qualitative evidence of modification. For each group, a baseline-adjusted model was run wherein influences were specified from all control variables to the latent variables. Thereafter, nested comparisons were done in order to determine significant reductions in model fit when constraining the statistically insignificant paths to zero. The paths constrained to zero were slightly different across the three groups (see Table 2 footnote for model specifications); however, the results suggested that the constraints provided no worse model fit for any group (low: $\chi^2_{\text{dif}} = 2.43$, $df = 6$, $p = .88$; average: $\chi^2_{\text{dif}} = 13.66$, $df = 10$, $p = .19$; high: $\chi^2_{\text{dif}} = 7.94$, $df = 7$, $p = .34$).

The results did not support the modification hypothesis (see Table 2). Parameter estimates for the influence of anti-industry attitudes on

smoking involvement were similar and characterized by overlapping confidence intervals across all groups. Moreover, the models for each group explained a comparable amount of variance in smoking involvement ($r^2_{\text{low}} = 49\%$; $r^2_{\text{average}} = 44\%$; $r^2_{\text{high}} = 46\%$). However, the coefficients relating mistrust of the tobacco industry with anti-industry attitudes appeared relatively stronger in the high mistrust of companies group ($\beta = 1.07$) than in the average ($\beta = .59$) and low groups ($\beta = .82$). The confidence intervals around these estimates slightly overlapped in the case of both the low and high groups, and the average and low groups; however, the non-overlapping estimate for the high and average mistrust group suggested that the relationship may be stronger among youth with high mistrust of companies. This indication of a stronger, not weaker, relationship between the two industry-focused constructs among youth with high mistrust of companies was the opposite of hypothesized expectations. Indeed, these results suggested that if a modification effect existed in this population, it appeared curvilinear, with the weakest influence of industry mistrust on anti-industry attitudes found among those in the average company mistrust group.

The final hypothesis concerned whether mistrust of companies directly influenced mistrust of the tobacco industry, and, through this

TABLE 2. Adjusted Influence of Mistrust of the Tobacco Industry and Anti-tobacco-industry Attitudes on Smoking Involvement, by Strength of Mistrust of Companies

	Models Stratified by Mistrust of Companies			
	High Mistrust ^a (n = 2,188) β (95% CI)	Average Mistrust ^b (n = 2,260) β (95% CI)	Low Mistrust ^c (n = 2,222) β (95% CI)	Model with All Observations β (95% CI)
Model parameters				
Mistrust of tobacco industry → anti-industry attitudes	1.07 (.124, .90)	.59 (.72, .47)	.82 (.82(.93, .71)	.81 (.81(.03)
Anti-industry attitudes → smoking involvement	-.58 (-.44, -.71)	-.60 (-.42, -.77)	-.64 (-.50, -.77)	-.52 (.04)
R²				
Anti-industry attitudes	91%	52%	66%	72%
Smoking involvement	46%	44%	49%	46%
Model fit indices				
CFI	.92	.96	.96	.96
TLI	.91	.96	.96	.95
RMSEA	.04	.03	.03	.03

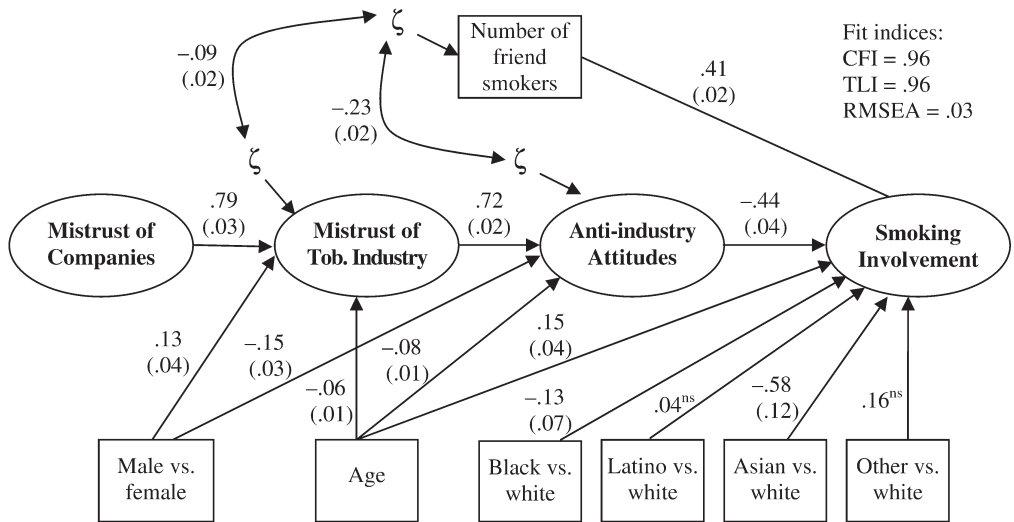
Notes: CFI = comparative fit index. TLI = Tucker-Lewis index. RMSEA = root mean square error of approximation.

^a High mistrust model adjusted for age on mistrust of the tobacco industry and anti-industry attitudes, and for age, ethnicity, and number of friend smokers on smoking involvement.

^b Average mistrust model adjusted for age on mistrust of the tobacco industry and anti-industry attitudes, and for age and number of friend smokers on smoking involvement.

^c Low mistrust model adjusted for age and sex on mistrust of the tobacco industry and anti-industry attitudes, and for age, ethnicity, and number of friend smokers on smoking involvement.

FIGURE 2. Adjusted Model of the Influence of Mistrust of Companies on Mistrust of the Tobacco Industry, Anti-tobacco-industry Attitudes, and Smoking Involvement



Notes: ns = not statistically significant at $p < .05$. CFI = comparative fit index. TLI = Tucker-Lewis index. RMSEA = root mean square error of approximation.

relationship, indirectly influenced anti-industry attitudes and smoking involvement (see Figure 2). A baseline-adjusted model was again estimated, where all control variables had direct influences on all latent variables. Constraining statistically insignificant paths to zero did not reduce model fit ($\chi^2_{\text{diff}} = 12.13$, $df = 9$, $p = .21$), and the hypothesized model provided a good fit with the data (CFI = .96; TLI = .96; RMSEA = .03). The positive path from mistrust of companies to tobacco industry mistrust was strong ($\beta = .79$), accounting for most of its model-explained variance ($r^2 = .52$). The strong path estimate from mistrust of the tobacco industry to anti-industry attitudes ($\beta = .72$) accounted for most of the model-explained variance in these attitudes, as well ($r^2 = .61$). Finally, the negative influence of anti-industry attitudes on smoking involvement appeared reasonably strong ($\beta = -.44$), making a significant contribution to the model-explained variance in smoking involvement ($r^2 = .47$).

DISCUSSION

Results from this study provide support for a conceptual focus on trust as a means of understanding how adolescents' perceptions of the tobacco industry influence their smoking behavior. In particular, mistrust of the tobacco industry appeared to have a relatively strong

influence on anti-tobacco industry attitudes, which in turn, explained significant variability in smoking involvement. To the extent that anti-industry campaigns foster adolescents' mistrust of the tobacco industry, these changes appear likely to further prevent and reduce smoking involvement. This is not to say, however, that these campaigns should be used indefinitely, since this prevention strategy could "wear out" over time. For instance, in states with established anti-industry campaigns, anti-industry attitudes are stronger than among youth in other states but appear to have leveled off (Evans et al. 2003; Thrasher et al. 2004). To help ensure a continued decline in youth smoking, it may be important to devise other prevention messages with other content that resonates with different values and identity concerns among youth. Nevertheless, anti-industry campaigns could be translated to settings outside the United States, and this prevention strategy may prove powerful if ads can be crafted to resonate with the concerns of adolescents in these settings (Thrasher and Bentley, 2006).

This study also provides evidence that a general mistrust of companies provides a basis for more specific attitudes and beliefs about the tobacco industry. In the final model, youths' general mistrust of companies had a strong positive influence on mistrust of the tobacco industry. In accord with Hardin's encapsulated-

interest theory of trust, these general beliefs appear likely to have shaped the more relevant trust-related beliefs about the tobacco industry. Furthermore, study results did not support modification of the key relationships between perceptions of the tobacco industry and smoking involvement, at least in the direction that was hypothesized. In the end, the results provided evidence both that mistrust of the tobacco industry mediated the influence of mistrust of companies on smoking and that the relationship between mistrust and negative attitudes about the tobacco industry was strongest among youth with high mistrust of companies. Among these youth, perceptions of the untrustworthiness of the tobacco industry appeared to strongly influence the development of negative attitudes about the industry. Hence, they did not appear to hold cynical views about the tobacco industry's duplicitous practices as merely reflecting market norms. When viewed in conjunction with the above study findings about the direct influence of mistrust of companies on mistrust of the tobacco industry, these results suggested that anti-tobacco industry messages may actually have capitalized on and resonated with youths' predispositions to mistrust companies. Thus, this kind of messaging strategy appeared viable, even among particularly mistrustful youth.

The study results should be considered in light of other studies on the socialization of consumer behavior and receptivity to marketing. Other studies have indicated that youth are generally mistrustful of and dislike advertising by the time they are 11 or 12 years old (Roedder John 1999). The lack of an association between age and mistrust of companies found in our sample of youths ages 12–17 suggests that this disposition may be relatively stable across adolescence. On the other hand, an inverse relationship was found between age and both mistrust of the tobacco industry and anti-industry attitudes, even after controlling for youths' own smoking behavior as well as for the smoking behavior of their friends. Hence, against a background of relatively stable mistrust of companies across adolescence, tobacco industry marketing practices and mass media glamorization of smoking may be more successful in promoting trust and relatively positive sentiment toward the industry among older adolescents than among younger adolescents. Indeed, the tobacco industry more aggressively markets its products to older adoles-

cents and young adults than to younger adolescents (Ling and Glantz 2002), and these older youth may, as a result, be more receptive to tobacco marketing efforts. Current indications that smoking may be on the rise among young adults suggest that policies and messaging strategies may need to target this young adult population to ensure that gains achieved during adolescence are not lost (Lantz 2003).

Even though this study found that sex and race/ethnicity had little, if any, influence on the primary study constructs, future analyses should specifically test the applicability of these models across age, sex, and racial/ethnic groups. The current study was undertaken to determine the general relationships among study variables in a diverse, nationally representative sample of youth. These results should inform the development of specific hypotheses around differences that may occur by age, sex, and race/ethnicity.

Future research in this area may benefit from further refinement and elaboration of the meanings and dimensions of trust. The measures used in this study were theory-based and adapted from existing measures that had reasonable reliability and validity. Nevertheless, some theories call attention to additional dimensions of trust besides uncertainty that may be important to consider. For instance, some theories and research call attention to the perceived congruence of values as foundational to trust perceptions, because shared values imply a shared behavioral orientation that flows from those values (Kehoe and Ponting 2003; Knight 2001; Parsons 1968). At first glance, this focus may seem relatively far afield from a proper conceptualization of consumption behavior and health. However, corporations' attempts to build brand images, foster trust, and bolster their reputations through corporate social responsibility campaigns (Hutton et al. 2001; Sagar and Singla 2004) are likely to reflect what they see as the values of their consumers. Studies are needed to determine whether this additional dimension of trust adds explanatory power to the conceptual models examined here. An analytic focus on value congruence may help explain, for instance, any differences found across racial, cultural, or socioeconomic subgroups of the population.

There were a number of limitations to this study. Because the data were gathered at one time point, it was difficult to ensure the temporal ordering of the hypothesized causal rela-

tionships. For analyses of unchangeable factors, such as age, sex, or ethnicity, this was not an issue. Temporal stability may also have characterized the mistrust of companies construct, as evinced by its lack of association with age. The same cannot be said for other study constructs, and the models did not address feedback relationships that might have occurred among variables. For instance, in spite of previous studies indicating that anti-industry attitudes and beliefs influence the extent of smoking involvement, these domains may have a reciprocal influence on one another. It is important to note, however, that most of the study sample had never smoked, and only 7 percent of the sample reported smoking in the previous 30 days. Hence, attitudinal adjustment to rationalize current behavior is less likely to explain variability in intentions and past behavior, which are the variables used to define smoking involvement for 93 percent of the sample. Nevertheless, to the extent that reciprocal relationships appear among the study variables, our results are likely to have overestimated causal influences. In order to minimize this problem, we drew from existing theory and previous empirical results in specifying constructs and their proposed influence on one another (Bollen 1989). Nevertheless, longitudinal studies may be necessary to sort out the causal ordering of key study relationships examined here. The initiation of anti-industry campaigns in countries besides the United States may provide a better means for doing so given the extremely high prevalence of exposure to anti-industry ads and possible habituation effects to these ads among U.S. youth.

Another limitation of the study concerned response bias, which may have been relatively significant due to the moderate response rate for the study survey. The 50 percent response rates for earlier administrations of the LMTS are average for random-digit-dial studies (O'Rourke et al. 1998). However, response rates for the two surveys used for this study (43% and 30%) fell off despite comparable sampling and recruitment strategies. This phenomenon likely reflects more general declines in survey response rates due to the growing prevalences of cell phones, caller ID, and general lack of response (O'Rourke et al. 1998). Because no data on nonresponders were gathered, we could not determine the generalizability of the results reported here. Nevertheless, the nationally representative nature of

the sample and the oversampling of minority youth provided some assurances that the results applied to many American youth.

A related issue concerns potential underreporting of smoking intentions and behavior due to survey mode (i.e., telephone) and setting (i.e., home) effects. Precautions were taken to ensure that others present during the interview could not deduce question content based on overhearing participant responses; however, some adolescents may have been concerned that others could still determine or listen in on their responses. Studies in California (Moskowitz 2004) and Massachusetts (Currivan et al. 2004) indicate that self-reported 30-day smoking estimates for adolescents are substantially lower when using data from telephone-administered surveys (9% and 12%, respectively) than from school-based surveys (14% and 26%, respectively). We did not attempt to estimate the extent of underreporting in our sample. In the end, however, any underreporting would likely bias estimates toward finding no effect, as was concluded in a recent study that compared data from national school-based samples with data from early waves of LMTS data (Hersey et al. forthcoming).

A number of methodological limitations characterized the group comparisons made in this study, as well. The continuous nature of the mistrust of companies construct and the absence of studies reporting meaningful thresholds for its influence on study variables did not allow grouping of observations into either naturally occurring or theoretically discrete categories. Indeed, this issue may help explain study results in favor of both mediation *and* moderation hypotheses that involved this construct. An alternative strategy for addressing moderation hypotheses would have involved deriving an interaction latent variable whose indicators were the product of items from both mistrust of companies and the latent variables whose influence mistrust was hypothesized to modify (Rigdon, Schumacker, and Wothke 1998). However, the suitability of this method is not well-established when the data are ordinal variables. Also, existing software did not allow for ordinal variables with more than 10 values, a limit that would have been surpassed when multiplying together items with four or more response categories, as in this study. An analogous limitation concerned the variance of latent variable parameters across groups at different levels of mistrust, which resulted in an

inability to conduct meaningful statistical tests of the differences in structural coefficients across groups. Hence, the similarities and differences in structural parameter estimates across groups may have been an artifact of group differences in the measurement of latent variables rather than reflecting true similarities or differences.

The study results were suggestive of the potential role of mistrust in anti-industry campaigns among youth, but we did not directly examine exposure to anti-industry ads. Although a self-reported exposure variable was collected in the surveys, responses were subject to recall bias; perhaps more importantly, responses did not account for ad exposure more than six weeks prior to the interview date. The data for this study were gathered 3 to 3½ years after the launch of an anti-industry campaign with national media purchase, and exposures to campaign ads before the six-week time frame may have already changed attitudes and beliefs about the tobacco industry. Indeed, the high rate of recent exposure to “truth” ads across the campaign’s existence (72% within six months of the campaign launch and a mean of 52% from 2000 to 2003) suggests that most youth would have already been exposed to campaign ads before the period captured in this study. Finally, the national scope of this mass media campaign may have indirectly influenced youth by generally shifting social norms around and the salience of beliefs about the tobacco industry. Given these limitations around assessing exposure, this study was focused, instead, on the social and social-psychological domains that capture and resonate with the beliefs that anti-industry ads target, as well as the strength of association between these beliefs and smoking.

CONCLUSION

Despite these limitations, this study supports the use of a theoretical framework that includes expectations about trustworthiness as a means of understanding how perceptions of the tobacco industry prevent smoking. This conceptualization suggests that prevailing mistrust among youth may help explain the meaningfulness of prevention messages that focus on the deceitful practices of the tobacco industry. Given that the perceived untrustworthiness of companies was strongly related to perceptions of the tobacco industry as untrustworthy, youths’ predispositions to mistrust companies may shape

their receptivity to prevention messages targeting tobacco. Indeed, the lack of support for moderation hypotheses suggested that there may be little need to use other kinds of messages to affect smoking among youth with strong mistrust of companies, because this mistrust does not appear to make them cynical about tobacco industry practices. Concerns that this approach to tobacco prevention may “wear out” are warranted; even so, this study’s attempt to contextualize the anti-industry strategy may inform the development of anti-industry messages for use in campaigns outside the United States. Finally, this study suggests that a focus on the perceived trustworthiness of companies could enrich our understanding of other health-related consumption behaviors, such as those involving the fast food industry. A focus on trust may open up novel ways to frame health promotion campaigns so they resonate with the values, expectations, and identity concerns of target populations.

REFERENCES

- American Association for Public Opinion Research. 2004. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*, 3rd ed. Lenexa, KS: The American Association for Public Opinion Research.
- American Legacy Foundation. 2002. *What Youths Think about the Tobacco Industry and Not Smoking: Results from the Baseline Legacy Media Tracking Survey*. Washington, DC: American Legacy Foundation.
- Asparouhov, Tihomir. 2004a. *Stratification in Multivariate Modeling*. Los Angeles, CA: Muthén & Muthén.
- . 2004b. *Weighting for Unequal Probability of Selection in Latent Variable Modeling*. Los Angeles, CA: Muthén & Muthén.
- Balbach, Edith D. and Stanton A. Glantz. 1998. “Tobacco Control Advocates Must Demand High-Quality Media Campaigns: The California Experience.” *Tobacco Control* 7:397–408.
- Beck, Ulrich. 1992. *Risk Society: Towards A New Modernity*. London: Sage.
- . 2000. “Risk Society Revisited: Theory, Politics, and Research Programmes.” Pp. 211–28 in *The Risk Society and Beyond: Critical Issues for Social Theory*, edited by B. Adam, U. Beck, and J. VanLoon. London: Sage.
- Benford, Robert D. and David A. Snow. 2000. “Framing Processes and Social Movements: An Overview and Assessment.” *Annual Review of Sociology* 26:611–39.
- Bentler, Peter M. 1990. “Comparative Fit Indices in Structural Modeling.” *Psychological Bulletin* 107:588–606.

- Bolle, Friedel. 1999. "Trust." Pp. 575–81 in *Consumer Research and Economic Psychology*, edited by P. E. Earl and S. Kemp. Northampton, MA: Edward Elgar Publishing, Inc.
- Bollen, Kenneth A. 1989. *Structural Equations with Latent Variables*. New York: John Wiley & Sons.
- Centers for Disease Control and Prevention. 1994. "Preventing Tobacco Use among Young People: A Report of the Surgeon General." Washington, DC: Department of Health and Human Services, Centers for Disease Control & Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking & Health.
- . 2001. "Youth Tobacco Surveillance—United States, 2000." *Morbidity and Mortality Weekly Report* 50:1–84.
- Cooke, Richard and Paschal Sheeran. 2004. "Moderation of Cognition-Intention and Cognition-Behavior Relations: A Meta-Analysis of Properties of Variables from the Theory of Planned Behavior." *British Journal of Social Psychology* 43:159–86.
- Curran, Douglas B., Amy L. Nyman, Charles F. Turner, and Lois Biener. 2004. "Does Telephone Audio Computer-Assisted Self-Interviewing Improve the Accuracy of Prevalence Estimates of Youth Smoking? Evidence from the UMass Tobacco Study." *Public Opinion Quarterly* 68:542–64.
- de Mooij, M. 2004. *Consumer Behavior and Culture: Consequences for Global Marketing and Advertising*. London: Sage.
- Eisenberg, Merrill, Christopher L. Ringwalt, David Driscoll, Manuel Vallee, and Gregory Gullette. 2004. "Learning from Truth: Youth Participation in Field Marketing Techniques to Counter Tobacco Advertising." *Journal of Health Communication* 9:223–31.
- Ennett, Susan T. and Karl E. Bauman. 1994. "The Contribution of Influence and Selection to Adolescent Peer Group Homogeneity: The Case of Adolescent Cigarette Smoking." *Journal of Personality and Social Psychology* 67:653–63.
- Evans, W. Douglas, Simani Price, Steven Blahut, Sarah Ray, James Hersey, and Jeffrey Niederdeppe. 2003. "Social Imagery, Tobacco Independence, and the Truth Campaign." *Journal of Health Communication* 9:122–32.
- Farrelly, Matthew C., Kevin C. Davis, M. Lyndon Haviland, Peter Messeri, and Cheryl G. Healtion. 2005. "Evidence of a Dose-Response Relationship between 'Truth' Antismoking Ads and Youth Smoking Prevalence." *American Journal of Public Health* 95:425–31.
- Farrelly, Matthew C., Cheryl G. Healtion, Kevin C. Davis, Peter Messeri, James C. Hersey, and M. Lyndon Haviland. 2002. "Getting to the Truth: Evaluating National Tobacco Countermarketing Campaigns." *American Journal of Public Health* 92:901–907.
- Flay, Brian R., Frank B. Hu, and J. G. Richardson. 1998. "Psychosocial Predictors of Different Stages of Cigarette Smoking among High School Students." *Preventive Medicine* 27:A9–A18.
- Gambetta, Diego. 1988. "Can We Trust Trust?" Pp. 213–37 in *Trust: The Making and Breaking of Cooperative Relations*, edited by D. Gambetta. New York: Basil Blackwell.
- Giddens, Anthony. 1991. *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Stanford, CA: Stanford University Press.
- Goldman, Lisa K. and Stanton A. Glantz. 1998. "Evaluation of Antismoking Advertising Campaigns." *Journal of the American Medical Association* 279:772–77.
- Hardin, Russell. 2001. "Conceptions and Explanations of Trust." Pp. 1–39 in *Trust in Society*, edited by K. S. Cook. New York: Russell Sage Foundation.
- . 2002. *Trust and Trustworthiness*. New York: Russell Sage Foundation.
- Hersey, James C., Jeff Niederdeppe, W. Douglas Evans, James Nonnemaker, Steven Blahut, Debra J. Holden, and M. Lyndon Haviland. 2003. "The Effects of State Counterindustry Media Campaigns on Beliefs, Attitudes, and Smoking Status among Teens and Young Adults." *Preventive Medicine* 37:544–52.
- Hersey, James C., Jeff Niederdeppe, W. Douglas Evans, James Nonnemaker, Steven Blahut, Debra J. Holden, Peter Messeri, and M. Lyndon Haviland. 2005. "The Theory of the Truth: How Counter-Industry Media Campaigns Effect Smoking Behavior among Teens." *Health Psychology* 24:22–31.
- Hersey, James C., Myri-Charlins Vilsaint, Jane A. Allen, Peter Messeri, Shu Wen Ng, Paul Mowery, Kevin C. Davis, Rosaleen Chou, and M. Lyndon Haviland. Forthcoming. "Peer Context Cues and Setting/Mode Effects in Youth Surveys." *Public Opinion Quarterly*.
- Howe, Neil and William Strauss. 1999. *Millennials Rising: The Next Great Generation*. New York: Vintage Books.
- Hu, Li-tze and Peter M. Bentler. 1999. "Cutoff Criteria for Fit Indices in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives." *Structural Equation Modeling* 6:1–55.
- Hutton, James G., Michael B. Goodman, Jill B. Alexander, and Christina M. Genest. 2001. "Reputation Management: The New Face of Corporate Public Relations?" *Public Relations Review* 27:257.
- Jackson, Christine. 1997. "Behavioral Science Theory and Principles for Practice in Health Education." *Health Education Research* 12:143–50.
- Jacobson, Peter D., Paula M. Lantz, Kenneth E. Warner, Jeffrey Wasserman, Harold A. Pollack, and Alexis A. Alhstrom. 2001. *Combating Teen*

- Smoking: Research and Policy Strategies*. Ann Arbor: University of Michigan Press.
- Joreskog, Karl G and Dag Sorbom. 1996. *LISREL 8: User's Reference Guide*. Chicago, IL: Scientific Software International.
- Kanter, Donald L. and Philip H. Mirvis. 1989. *The Cynical Americans: Living and Working in An Age of Discontent and Disillusion*. San Francisco, CA: Jossey-Bass.
- Kawachi, Ichiro and Lisa F. Berkman. 2000. "Social Cohesion, Social Capital, and Health." Pp. 137–73 in *Social Epidemiology*, edited by I. Kawachi and L. F. Berkman. Oxford, England: Oxford University Press.
- Kehoe, Susan M. and J. Rich Ponting. 2003. "Value Importance and Value Incongruence As Determinants of Trust in Health Policy Actors." *Social Science and Medicine* 57:1065–74.
- Knight, Jack. 2001. "Social Norms and the Rule of Law." Pp. 354–73 in *Trust in Society*, edited by K. S. Cook. New York: Russell Sage Foundation.
- Kolker, Emily S. 2004. "Framing As A Cultural Resource in Health Social Movements: Funding Activism and the Breast Cancer Movement in the US 1990–1993." *Sociology of Health and Illness* 26:820–44.
- Kotler, Philip, Ned Roberto, and Nancy Lee. 2002. *Social Marketing: Improving the Quality of Life*. Thousand Oaks, CA: Sage.
- Krosnick, Jon A. and Richard E. Petty. 1995. "Attitude Strength: An Overview." Pp. 1–24 in *Attitude Strength: Antecedents and Consequences*, edited by R. E. Petty and J. A. Krosnick. Hillsdale, NJ: Erlbaum.
- Lantz, Paula M. 2003. "Smoking on the Rise among Young Adults: Implications for Research and Policy." *Tobacco Control* 12:i60–i70.
- Lash, Scott. 2000. "Risk Culture." Pp. 33–46 in *The Risk Society and Beyond: Critical Issues for Social Theory*, edited by B. Adam, U. Beck, and J. VanLoon. London: Sage.
- Ling, Pamela M. and Stanton A. Glantz. 2002. "Why and How the Tobacco Industry Sells Cigarettes to Young Adults: Evidence from Industry Documents." *American Journal of Public Health* 92:908–16.
- Lunt, Peter. 1995. "Psychological Approaches to Consumption: Varieties of Research—Past, Present, and Future." Pp. 238–63 in *Acknowledging Consumption: A Review of New Studies*, edited by D. Miller. London: Routledge.
- Lupton, Deborah. 1994. "Consumerism, Commodity Culture and Health Promotion." *Health Promotion International* 9:111–18.
- Mayhew, Kathryn, Brian R. Flay, and Joshua A. Mott. 2000. "Stages in the Development of Adolescent Smoking." *Drug and Alcohol Dependence* 59:S61–S81.
- Montano, Daniel E., Danuta Kasprzyk, and Stephen H. Taplin. 1997. "The Theory of Reasoned Action and the Theory of Planned Behavior." Pp. 85–112 in *Health Behavior and Health Education*, edited by K. Glanz, F. M. Lewis, and B. K. Rimer. San Francisco, CA: Jossey-Bass.
- Moskowitz, Joel M. 2004. "Assessment of Cigarette Smoking and Smoking Susceptibility among Youth: Telephone Computer-Assisted Self-Interviews Versus Computer-Assisted Telephone Interviews." *Public Opinion Quarterly* 66:565–87.
- Muthén, Bengt O. and Tihomir Asparouhov. 2002. "Latent Variable Analysis with Categorical Outcomes: Multiple-Group and Growth Modeling in Mplus." Unpublished manuscript. University of California, Los Angeles, Los Angeles, CA.
- Muthén, Bengt O. and Anders Christofferson. 1981. "Simultaneous Factor Analysis of Dichotomous Variables in Several Groups." *Psychometrika* 46:407–19.
- Muthén, Linda K. and Bengt O. Muthén. 2004. *Mplus User's Guide: Statistical Analysis with Latent Variables*. Third Edition. Los Angeles, CA: Muthén & Muthén
- Neuborne, Ellen and Kathleen Kerwin. 1999. "Generation Y: Today's Teens—the Biggest Bulge Since the Boomers—May Force Marketers to Toss Their Old Tricks." *Business Week* February 15, p. 80.
- Niederdeppe, Jeff, Matthew C. Farrelly, and M. Lyndon Haviland. 2004. "Confirming Truth: More Evidence of a Successful Countermarketing Campaign in Florida." *American Journal of Public Health* 94:255–57.
- O'Rourke, D., G. Chapa-Resendez, L. Hamilton, S. Lind, L. Owens, and V. Parker. 1998. "An Inquiry into Declining RDD Response Rates: Part I, Telephone Survey Practices." *Survey Research* 29:1–4.
- Parsons, Talcott. 1968. "On the Concept of Value-Commitments." *Sociological Inquiry* 38:135–60.
- Paul, Pamela. 2001. "Getting inside Gen Y." *American Demographics* 23(9):42–49.
- Petty, Richard E. and Duane T. Wegener. 1998. "Attitude Change: Multiple Roles for Persuasion Variables." Pp. 323–90 in *Handbook of Social Psychology*, edited by D. Gilbert, S. Fiske, and G. Lindzey. New York: Oxford University Press.
- Pierce, John P., Won S. Choi, Elizabeth A. Gilpin, Arthur J. Farkas, and Robert K. Merritt. 1996. "Validation of Susceptibility as a Predictor of Which Adolescents Take Up Smoking in the United States." *Health Psychology* 15:355–61.
- Pierce, John P., Sherry Emery, and Elizabeth Gilpin. 2002. "The California Tobacco Control Program: A Long-Term Health Communication Project." Pp. 97–114 in *Public Health Communication: Evidence for Behavior Change*, edited by R. C. Hornik. Mahway, NJ: Lawrence Erlbaum.
- Putnam, Robert D. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.
- Reid, Roddey. 2005. *Globalizing Tobacco Control:*

- Anti-smoking Campaigns in California, France, and Japan*. Bloomington, IN: Indiana University Press.
- Rigdon, Edward E., Randall E. Schumacker, and Werner Wothke. 1998. "A Comparative Review of Interaction and Nonlinear Modeling." Pp. 1–16 in *Interaction and Nonlinear Effects in Structural Equation Modeling*, edited by R. E. Schumacker and G. A. Marcoulides. Mahway, NJ: Lawrence Erlbaum.
- Roedder John, Deborah. 1999. "Consumer Socialization of Children: A Retrospective Look at Twenty-Five Years of Research." *Journal of Consumer Research* 26:183–213.
- Rotter, Julian B. 1980. "Interpersonal Trust, Trustworthiness, and Gullibility." *American Psychologist* 35:1–7.
- Sagar, Prema and Ashwani Singla. 2004. "Trust and Corporate Social Responsibility." *Journal of Communication Management* 8:282–91.
- Siegel, Michael and Lois Biener. 2000. "The Impact of an Antismoking Media Campaign on Progression to Established Smoking: Results of a Longitudinal Study." *American Journal of Public Health* 90:380–86.
- Sly, David F., Gary R. Heald, and Sarah Ray. 2001. "The Florida 'Truth' Anti-Tobacco Media Evaluation: Design, First Year Results, and Implications for Future State Media Evaluations." *Tobacco Control* 10:9–15.
- Sly, David F., Edward Trapido, and Sarah Ray. 2002. "Evidence of the Dose Effects of an Antitobacco Counteradvertising Campaign." *Preventive Medicine* 35:511–18.
- Snow, David A. and Robert D. Benford. 1988. "Ideology, Frame Resonance, and Participant Mobilization." Pp. 197–217 in *From Structure to Action*, edited by B. Klandermans, H. Kriesi, and S. Tarrow. Greenwich, CT: JAI Press.
- Thrasher, James F., Jeff Niederdeppe, Matthew C. Farrelly, Kevin C. Davis, Kurt M. Ribisl, and M. Lyndon Haviland. 2004. "The Impact of Anti-Tobacco Industry Prevention Messages in Tobacco Producing Regions: Evidence from the US Truth® Campaign." *Tobacco Control* 13: 283–88.
- Thrasher, James F. and Margaret E. Bentley. 2006. "The Meanings and Context of Smoking among Mexican University Students." *Public Health Reports* 121(5):578–85.
- Tyas, Suzanne L. and Linda L. Pederson. 1998. "Psychosocial Factors Related to Adolescent Smoking: A Critical Review of the Literature." *Tobacco Control* 7:409–20.
- Umeh, Kanayo and Reema Patel. 2004. "Theory of Planned Behavior and Ecstasy Use: An Analysis of Moderator-Interactions." *British Journal of Health Psychology* 9:25–38.
- Urberg, Kathryn A., Serdar M. Degirmencioglu, and Colleen Pilgrim. 1997. "Close Friend and Group Influence on Adolescent Cigarette Smoking and Alcohol Use." *Developmental Psychology* 33: 834–44.
- Voight, Joan. 2000. "The Consumer Rebellion: Are Marketers Alienating the People They Spend Billions to Reach?" *Adweek* 41:46–50.
- Weiss, Michael J. 2003. "To Be About to Be." *American Demographics* 25(7):28–36.
- Yamagishi, Toshio. 2001. "Trust as a Form of Social Intelligence." Pp. 121–47 in *Trust in Society*, edited by K. S. Cook. New York: Russell Sage Foundation.
- Zollo, Peter. 2004. *Getting Wiser to Teens: More Insights into Marketing to Teenagers*. Ithaca, NY: New Strategist Publications, Inc.

James F. Thrasher is Assistant Professor of Health Promotion at the University of South Carolina and Visiting Professor at the Instituto Nacional de Salud Pública in Mexico. His current research involves examining the impact of mass media and tobacco control policy on perceptions of the tobacco industry, the social acceptability of smoking, and smoking behavior in Mexico and other countries.

Christine Jackson is a Senior Research Scientist at the Pacific Institute for Research and Evaluation, Chapel Hill Center, Chapel Hill, North Carolina. Her research focuses on explicating how parenting practices and mass media influence alcohol and tobacco use among youths. This work has led her to develop and evaluate health communication interventions that target parents as a means of preventing youth substance use.