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Enhancing the Effectiveness of Antismoking Messages via Self-Congruent Appeals

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A self-congruent effect model was applied to understand adolescents' responses to antismoking advertising that referred to the self or others. Experiment 1 showed that self-referring ads generated more negative smoking attitudes than other-referring ads among adolescents with independent self-construals, whereas other-referring ads generated more negative smoking attitudes than self-referring ads among adolescents with interdependent self-construals. A survey further showed that smokers rated themselves higher on a measure of independent self-construal than nonsmokers. Experiment 2 then found that self-referring ads are more effective than other-referring ads for smokers, who have independent self-construals. Findings supported the idea that health communication campaign designers can maximize message effectiveness by developing different messages for different target segments of the population based on their self-construals.

It has been well documented that self-congruent advertising messages, messages that are congruent with individuals' self-concepts, are more effective than self-incongruent advertising messages, messages that are incongruent with individuals' self-concepts. Tobacco companies seem to make use of this information to its greatest extent. An analysis of corporate documents indicated that tobacco companies conducted extensive research to identify the most appealing images to adolescents, such as independence and freedom, and then developed cigarette advertising that portrayed these images (Pollay, 2006). In particular, in recent years the tobacco industry made great efforts to expand Asian markets by constructing a positive tobacco culture that is associated with independence, music, entertainment, adventure, sport, and glamor (Knight & Chapman, 2006).

It is therefore important for antismoking campaign designers to also maximize the persuasive effects of antismoking messages by understanding their target audience members' self-construals and employing advertising messages that are congruent with or that appeal to their self-construals. This type of targeting and segmentation strategy has been widely employed in promotions of consumer products (Weinstein, 1993) and can be utilized to

improve the effectiveness of health campaigns as well. Two important self-construals are independence and interdependence (Markus & Kitayama, 1991). This article explores how individuals' independent and interdependent self-construals influence their responses to different ad appeals.

In parallel, advertising messages differ in terms of whether they focus on how the right product choice can benefit targeted individuals or other people important to them (Wang, Bristol, Mowen, & Chakraborty, 2000). Ads also can focus on whether the individuals or their important others can be affected if they do not adopt advocated behaviors, as in the case of advertising messages that promote health behaviors (Murray-Johnson, Witte, Liu, & Hubbell, 2001; Perea & Slater, 1999). Advertisements thus can be categorized as either self-referring ads or other-referring ads. Drawing on the self-congruent effect model, this study predicted that self-referring ads will be more effective at promoting antismoking attitudes than other-referring ads for individuals with an independent self-construal. On the contrary, other-referring ads will be more effective than self-referring ads for individuals with an interdependent self-construal. This prediction was explored in Experiment 1.

Past research has indicated that adolescents initiate smoking to express their independence or autonomy (Eckert, 1983; Urberg & Robbins, 1981). Therefore, it is predicted

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that smokers will be more likely than nonsmokers to have an independent self-construal. A survey was conducted to test this prediction. If smokers have independent self-construals, then within a self-congruent effect model, it is hypothesized that self-referring ad messages will be more effective at altering smokers' attitudes toward smoking than will other-referring ad messages. Experiment 2 tested this hypothesis.

INDEPENDENT AND INTERDEPENDENT SELF-CONSTRUALS

Independent and interdependent self-construals pertain to individuals' beliefs about "the relationship between the self and others and, especially, the degree to which they see themselves as separate from others or as connected with others" (Markus & Kitayama, 1991, p. 226). In general, individuals with an independent self-construal see themselves as autonomous and independent persons (Markus & Kitayama, 1991). They focus on "(a) internal abilities, thoughts, and feelings, (b) being unique and expressing the self, (c) realizing internal attributes and promoting one's own goals, and (d) being direct in communication" (Singelis, 1994, p. 581).

In contrast, individuals with interdependent self-construals see themselves in social relationships and recognize the importance of feedback from others in determining their behaviors (Markus & Kitayama, 1991). In general, they emphasize "(a) external, public features such as statuses, roles, and relationships, (b) belonging and fitting in, (c) occupying one's proper place and engaging in appropriate action, and (d) being indirect in communication and 'reading others' minds'" (Singelis, 1994, p. 581).

Cultures shape people's independent and interdependent self-construals (Markus & Kitayama, 1991). People in individualistic cultures tend to have independent self-construals, whereas people in collectivistic cultures tend to hold interdependent self-construals. Nevertheless, it is believed that within the same individual, independent and interdependent self-construals coexist, even though cultures influence the relative accessibility of these two self-construals (Singelis, 1994). It has also been demonstrated that within the same culture (either individualistic or collectivistic), people vary in terms of their level of independent and interdependent self-construal (Lee, Aaker, & Gardner, 2000).

Most important, according to Markus and Kitayama (1991), independent and interdependent self-construals serve important functions because they enhance people's sensitivities to self-congruent information, regulate their affect, and motivate them to action. This article explores how message perceivers' independent and interdependent self-construals alter their responses to different antismoking messages.

MESSAGES THAT REFER TO THE SELF VERSUS OTHERS

Health persuasion messages can be distinguished based on the group to whom the messages refer (Murray-Johnson et al., 2001; Perea & Slater, 1999). Health messages can refer to the self (the target audience) or others (e.g., family and friends of the target audience). Self-referring messages address the threat and possible health consequences to members of the target audience if they do not comply with advocated behaviors. Other-referring messages emphasize the threat to or worries of important others if members of the target audience do not adopt certain behaviors.

In other-referring ads that promote health behaviors, the others are usually relatives or friends of the targeted message perceivers (Murray-Johnson et al., 2001; Perea & Slater, 1999). However, these important others can be implicated in different ways. For example, Perea and Slater (1999) distinguished anti-drunk driving messages that focused on the threat of death or injury for drivers, the target audience, or the threat of death or injury for their families and friends riding with them. However, not all problematic behaviors impose direct health or life threats to friends or family. When exploring messages that promote AIDS-prevention behaviors, Murray-Johnson et al. (2001) defined messages that refer to the self as messages that focus on how members of the target audience would be embarrassed and how their life could be ruined if they were infected, whereas messages that refer to others focus on how their relatives' lives could be affected due to the stigma associated with AIDS. This study proposes that health messages can also implicate important others by arousing their worries or concerns. In sum, the others in other-referring advertising can be implicated by problematic behaviors because these behaviors present physical threats, cause shame, or simply arouse worry.

SELF-CONGRUENCY EFFECTS

In this article, self-congruency effects refer to the superior persuasive effects of messages that are congruent with message perceivers' self-concepts or self-construals. Self-congruency effects have been well documented in advertising literature (e.g., Brock, Brannon, & Bridgwater, 1990; Hong & Zinkhan, 1995; Wang & Mowen, 1997). These findings are consistent across different dimensions of the self. For example, Chang (2000), as well as Hong and Zinkhan (1995), found that introvert participants responded more positively to ads depicting introvert users, and extrovert participants favored ads portraying extrovert users. Jaffe (1990, 1994) showed that ads containing role portrayals consistent with participants' femininity or masculinity were more effective than ads with inconsistent portrayals.

The effectiveness of self- and other-referring messages has also been shown to vary as a function of self-construals. Murray-Johnson et al. (2001) demonstrated that, for individuals with an independent self-construal, messages posing threats to the self aroused greater levels of fear than those posing threats to the family, whereas for individuals with an interdependent self-construal, messages posing threats to the family aroused greater levels of fear than those posing threats to the self. Perea and Slater (1999) showed that women responded more favorably to health messages that referred to others as opposed to the self, whereas men responded more favorably to health messages that referred to the self rather than to others. Perea and Slater's findings support the self-congruency effect model because women are more likely to hold an interdependent self-construal, whereas men are more likely to hold an independent self-construal (Markus & Oyserman, 1989). In a similar vein, Wang and Mowen (1997, see also Wang et al., 2000) found that individuals who had a sense of independence preferred ad appeals that emphasized individuality and autonomy, whereas individuals who had a sense of interdependence and saw others as an extension of the self, preferred ad appeals that stressed relationships and interpersonal commitment.

These findings support the hypothesis that self-congruent messages are more effective than self-incongruent messages. However, whether self-congruent messages will be more effective when antismoking is promoted has not been explored. Antismoking advertising directed at adolescents can emphasize either threats to the smokers themselves or worries of their families. Extrapolating from past research, self-referring antismoking messages should be more effective than other-referring messages for adolescents with an independent self-construal, whereas other-referring antismoking messages should be more effective than self-referring messages for adolescents with an interdependent self-construal. These predictions were specified as H1.

H1: Participants who have an independent self-construal will express more negative smoking attitudes when they are exposed to self-referring ads as opposed to other-referring ads. In contrast, participants who have an interdependent self-construal will express more negative smoking attitudes when they are exposed to other-referring ads as opposed to self-referring ads.

EXPERIMENT 1

Method

Design

This experiment was conducted using a 2×2 between-subjects design. The manipulated factor was ad

type (self-referring vs. other-referring). In addition, participants were categorized as having either an independent or interdependent self-construal.

Materials

Professionals developed the antismoking advertisements. The ad that referred to the self, the target audience, described how a young smoker regretted taking up smoking habits that caused his health to deteriorate. As discussed earlier, messages can involve families and friends in many different ways, depending on the characteristics of the health issue. For example, health issues can cause shame for families and friends, directly threaten their health, or arouse worry among them. Smoking may not necessarily cause shame or pose a health threat to families and friends, unless they are directly exposed to the smoke. Therefore, in this study, the other-referring ad described how parents of a young smoker were worried because smoking damaged the health of their child. For both versions of the ad, the bottom of the ad featured smoking-related statistics as often shown in antismoking advertising. To reduce confounding effects caused by visual variation, ad layout and visuals remained constant across the two ad versions.

Participants

The experiment was conducted in Taiwan, which has been a target market for international cigarette advertisers in Asia. Because statistics indicate that most Taiwanese smokers begin smoking when they are in high school (Bureau of Health Promotion, 2003), high school students have been the main target segment for antismoking campaigns. Among Taiwanese high school students, 15.01% of male students are regular smokers and 4.52% of female students are regular smokers (Chang, 2003). Therefore, this study focused on high school students' responses to antismoking advertising. One high school, Xin-Dian High School, was randomly selected from a complete list of high schools in Taipei. Three classes ($N = 97$ students) were then randomly selected for the experiment. Among them, 69.10% were 16 years old, 30.90% were 17 years old, and 50.50% were male.

Procedures

Each student was randomly given a folder containing an ad for one of the two message conditions. When exploring smoking-related topics, researchers should disguise the purpose of the research to reduce participants' vigilance (Agostinelli & Grube, 2003). Participants were told that the research was composed of two parts. The first part was a short lifestyle and personality survey for high school students. In the survey, they responded to a long list of filler questions and rated their self-construals. The second part was presented as a study on readers' responses to different magazine layouts, and participants were asked to read a segment of magazine pages containing articles and ads. The antismoking ad, as well as two filler product ads, was

attached to the end of the articles. The magazine articles were about nature and science. Participants read the magazine pages at their own pace. Then they rated scales that assessed their smoking attitudes, items for manipulation checks, and other filler items.

Independent Variables

Self-construal. Gudykunst et al.'s (1996) independent/interdependent self-construal scale was adopted to assess participants' self-construals. The scale contains 15 independent self-construal items, including items such as "It is important for me to act as an independent person," and "My personal identity, independent of others, is very important to me." The 14 interdependent self-construal items include statements such as, "My happiness depends on the happiness of those in my group," and "I am careful to maintain harmony in my group." Cronbach's $\alpha = .79$ for the independent items and $.82$ for the interdependent items. The two subscales were significantly and negatively correlated, $r(95) = -.63, p < .01$. Participants' responses to the independent items and reversed responses to the interdependent items were averaged to indicate their self-construals, with higher scores indicating more independent self-views. Participants were then categorized as independent or interdependent based on a median split. analysis of variance indicated that the two groups differed significantly on their level of independent self-construal, $F(1, 95) = 172.32, p = .01, M_{\text{independent}} = 3.96, SD = 0.28, M_{\text{interdependent}} = 3.05, SD = 0.37$.

Self-referring ads versus other-referring ads. Two statements rated on a 7-point Likert-type scale were used for manipulation checks: "The ad addressed how smokers caused harm to themselves by damaging their health," and "The ad addressed how smokers caused harm to families by making them worried." Responses to the first item and reversed responses to the second item were averaged, thus higher numbers indicate greater degrees of self-referring. As predicted, self-referring ads generated higher ratings than other-referring ads, $F(1, 95) = 54.01, p < .01, M_{\text{self-referring}} = 4.98, SD = 1.36, M_{\text{other-referring}} = 3.21, SD = 0.96$. Therefore, the manipulation was deemed successful.

Dependent Variable – Antismoking Attitudes

Using a 7-point Likert-type scale, participants responded to two statements adopted from Chang (2005b) measuring their attitudes toward their own smoking: "I don't mind if I smoke" and "I can accept the idea of me being a smoker." Reliability of this scale was satisfactory (Cronbach's $\alpha = .87$). Responses were averaged and reversed, with higher scores indicating more negative smoking attitudes or stronger antismoking attitudes.

Results

Analysis of variance showed that the interaction between ad type and self-construal was significant, $F(1, 93) = 4.91, p = .03,$

$\eta^2 = .04,$ observed power = $.59$. Even though the simple main effect of ad type for independent participants was not significant, $F(1, 40) = 1.94, p = .17, \eta^2 = .05,$ the means were in the expected direction, $M_{\text{self-referring}} = 5.71, SD = 1.63, M_{\text{other-referring}} = 5.00, SD = 1.58$. The simple main effect of ad type for interdependent participants only approached the significance level, $F(1, 53) = 3.18, p = .08, \eta^2 = .06,$ yet the means were also in the expected direction, $M_{\text{self-referring}} = 6.12, SD = 1.40, M_{\text{other-referring}} = 6.65, SD = 0.81$. Therefore, the significant interaction between ad type and self-construal was consistent with H1, but the simple main effects failed to support the predictions.

In addition, the main effect of self-construal was significant, $F(1, 93) = 13.47, p < .01, \eta^2 = .12,$ observed power = $.95$. Participants with interdependent self-construals expressed more negative attitudes toward smoking than did those with independent self-construals, $M_{\text{interdependent}} = 6.44, SD = 1.10, M_{\text{independent}} = 5.44, SD = 1.63$.

Discussion

Experiment 1 showed a significant interaction between ad type and self-construal, with self-congruent ads generating relatively less favorable smoking attitudes. This indicates that self-congruent ads are relatively more effective or persuasive than self-incongruent ads. This finding provided general support for the self-congruent effect model.

It is also important to note that Experiment 1 demonstrated that individuals with an independent self-construal had significantly more favorable attitudes toward smoking than did individuals with an interdependent self-construal. Because smokers or potential smokers should have more favorable attitudes toward smoking than nonsmokers, this result suggests that smokers or potential smokers may be more likely to have an independent self-construal than nonsmokers.

Other research also supports this prediction. First, past research has demonstrated that adolescents smoke to express independence or autonomy in a symbolic way (Eckert, 1983; Urberg & Robbins, 1981). Indeed, analyses of cigarette advertising campaigns in Asia have revealed that one of the major themes is independence (Knight & Chapman, 2006). In other words, these advertising campaigns have established a strong association between smoking and independence. Therefore, adolescents who smoke may have an independent self-construal, which motivates them to express their independence by lighting up cigarettes.

Furthermore, content analyses have found that cigarette advertising often features scenes of rugged individualism, such as showing models skiing alone in the countryside or riding alone in the mountains (King, Reid, Moon, & Ringold, 1991; Schooler, Basil, & Altman, 1996). Moreover, it is common for cigarette advertising to depict smokers with an image of adventure seeking and risk taking (Altman, Slater, Albright, & Maccoby, 1987). These images seem to be more congruent with an independent self-construal

than an interdependent self-construal. Indeed, past research demonstrated that individuals with ideal self-concepts that are congruent with ad-portrayed images are more likely to smoke than those with ideal self-concepts that are incongruent with ad images (Chang, 2007). Smokers also rated the values commonly portrayed in cigarette advertising to be more important than nonsmokers did (Chang, 2005c). Therefore, it is likely that smokers attracted by cigarette advertising would have an independent self-construal, which is congruent with the independent image and rugged individualism scenes in ad portrayals.

H2: Nonsmokers and smokers have different levels of independent and interdependent self-construals. Smokers will rate themselves higher on independent self-construal than nonsmokers (H2a), whereas nonsmokers will rate themselves higher on interdependent self-construal than smokers (H2b).

SURVEY 1

Method

Participants and Procedures

Three high schools were randomly selected from a complete list of high schools in Taipei. Two classes were then randomly selected from each school ($N = 193$ students). Research associates went to the selected classes, explained how to answer the Likert-type scales, and ensured students that the survey was anonymous. The survey assessed the students' independent and interdependent self-construals and their smoking behaviors.

Independent Measure—Smoking Status

Participants were first categorized into four groups based on their answers to a list of questions concerning smoking behaviors. (a) Nonsmokers were those who had never smoked tobacco ($n = 158$). (b) Experimenters were those who did not smoke in the past month but had occasionally experimented with smoking ($n = 21$). (c) Quitters were those who did not smoke in the past month but who had been regular smokers ($n = 2$). (d) Smokers were those who reported that they currently smoked daily or had done so within the past month ($n = 8$). Four participants did not indicate their smoking status, so their data were not included in the later analyses. Individuals in the latter three groups, who were either potential, former, or current smokers, were categorized as smokers. The four groups were thus combined to make two groups: nonsmokers ($n = 158$) and smokers ($n = 31$). There are three reasons to categorize experimenters, quitters, and smokers into one group and nonsmokers into another. First, past research showed that the former three groups were similar in terms of personality traits and values, but the three groups were different from nonsmokers

(Chang, 2005c). Second, an examination of the means for the four groups indicated that individuals in the three smoking groups are indeed similar in their ratings of independent traits, consistent with Chang (2005c). Third, experimenters, quitters, and smokers are the main targets of antismoking campaigns.

Dependent Measure—Self-Construal

The self-construal scale used in Experiment 1 was included in the survey. Cronbach's alpha was .83 for the independent items and .88 for the interdependent items.

Results

Analysis of variance indicated that smokers rated themselves significantly higher on the independent self-construal scale than did nonsmokers, $F(1, 187) = 5.24, p = .02, \eta^2 = .03$, observed power = .63, $M_{\text{smokers}} = 5.40, SD = 0.87$, $M_{\text{nonsmokers}} = 5.00, SD = 0.89$. However, smokers and nonsmokers did not rate themselves differently on the interdependent self-construal scale, $F(1, 187) = 0.04, p = .84, \eta^2 < .01$, observed power = .06, $M_{\text{smokers}} = 5.48, SD = 0.84$, $M_{\text{nonsmokers}} = 5.45, SD = 0.88$. The results supported H2a but not H2b.

Discussion

As predicted, smokers rated themselves higher on independent self-construal than did nonsmokers. No differences emerged between smokers and nonsmokers in terms of their interdependent self-construals. Because the target audience for antismoking advertising is smokers or potential smokers, antismoking advertising will be more effective if it appeals to their independent self-construals. In line with the findings of Experiment 1, if smokers have an independent self-construal, then antismoking ads that refer to the self should be more effective for them than ads that refer to important others. Nonsmokers, in contrast, have negative attitudes toward smoking to start with, and their attitudes are less likely to be influenced by ad appeals.

H3: Smokers will express more negative smoking attitudes when they are exposed to self-referring antismoking ads as opposed to other-referring ads, whereas nonsmokers' attitudes toward smoking will not be influenced by ad type.

EXPERIMENT 2

Method

Participants

High school students from the same high school as in Experiment 1 were recruited to participate in the study. Six

classes that did not participate in the first experiment were randomly selected ($N = 143$ students). Fifty-one percent of the participants were male, and they were either 16 (69.90%) or 17 years old (30.10%).

Design and Materials

This experiment was conducted using a 2×2 between-subjects design. The manipulated factor was ad type (self-referring vs. other-referring). In addition, participants were categorized as either smokers or nonsmokers. The same ads used in Experiment 1 were employed here.

Procedures

Similar to the procedures used in Experiment 1, participants were told that the research was composed of two parts. The only difference from Experiment 1 was that they were told that the first part was a short health behavior survey for high school students. In the survey, they responded to a long list of health behaviors, including smoking, drinking, drug use, and so forth. They indicated their smoking status at this stage. The second part was the same as in Experiment 1.

Independent Variables

Smoking status. Participants were first categorized into the four groups outlined in Experiment 1. The groups included nonsmokers ($n = 105$), experimenters ($n = 31$), quitters ($n = 1$), and current smokers ($n = 6$). Individuals in the latter three groups were combined together into the smokers group ($n = 38$).

Self-referring ads versus other-referring ads. The same questions used for manipulation checks in Experiment 1 were used here. As predicted, self-referring ads generated higher ratings of self-referring than other-referring ads, $F(1, 141) = 141.60, p < .01, M_{\text{self-referring}} = 5.30, SD = 1.19, M_{\text{other-referring}} = 3.11, SD = 0.99$.

Dependent Variable—Antismoking Attitudes

Using a 7-point Likert-type scale, participants responded to the same two items used in Experiment 1 to measure their attitudes toward their own smoking. Reliability of this scale was satisfactory (Cronbach's $\alpha = .98$). Responses were averaged and reversed, with higher scores indicating more negative smoking attitudes or stronger antismoking attitudes.

Results

Analysis of variance showed that the interaction between ad type and smoking status was significant, $F(1, 139) = 7.88, p < .01, \eta^2 = .03$, observed power = .80. For smokers, the simple main effect of ad type approached the significance level, $F(1, 36) = 3.36, p = .08, \eta^2 = .09$, with means in the expected direction, $M_{\text{self-referring}} = 5.07, SD = 1.69, M_{\text{other-referring}} = 4.10,$

$SD = 1.42$. The significant interaction supported H3, but the predicted simple main effect only approached significance.

Additional analyses showed that the simple main effect of ad type for nonsmokers was not significant, $F(1, 102) = 0.24, p = .62, \eta^2 = .01, M_{\text{self-referring}} = 6.76, SD = 0.65, M_{\text{other-referring}} = 6.81, SD = 0.46$. Nonsmokers' attitudes toward smoking were just as negative when they were exposed to self-referring ads as when they were exposed to other-referring ads. Both of the means approached 7, indicating that nonsmokers had very strong negative attitudes toward smoking, which were less subject to the influence of ad variations.

Last, the main effect of smoking status was significant, $F(1, 139) = 148.04, p < .01, \eta^2 = .51$. As predicted, nonsmokers expressed significantly more negative attitudes toward smoking than did smokers, $M_{\text{nonsmokers}} = 6.79, SD = 0.56, M_{\text{smokers}} = 4.68, SD = 1.64$.

Discussion

As predicted, for smokers, self-referring ads that addressed how the smoker's health would be damaged were more effective than other-referring ads that discussed how the smoker's family would be worried about his or her deteriorated health. This is probably because smokers have independent self-construals that direct their attention more to messages that refer to the self than to messages that refer to important others.

GENERAL DISCUSSION

Self-congruent effect models have been shown to have practical value for cigarette advertisers and should be of value for health campaign planners as well. This study showed that, when the emphasis of antismoking advertising is on health consequences, the effectiveness of messages addressing smokers' worries as compared to those addressing families' worries depends on the message perceiver's self-construal. For adolescents with an independent self-construal, referring to the self was more effective, whereas for those with an interdependent self-construal, referring to important others was more effective. In a similar vein, for smokers, who have been shown to have an independent self-construal, emphasizing problems they themselves may face is more effective than referring to others' worries.

Other health communication research on drug use also supports a self-congruent effect model. For example, it was shown that ad appeals high in sensation value worked more effectively for drug users (Everett & Palmgreen, 1995), who have a tendency toward sensation seeking (Donohew, Helm, Lawrence, & Shatzer, 1990). These studies suggest that self-congruent effects should be taken into account when developing advertising messages that promote health behaviors.

This study explored independent and interdependent self-construals at the individual level. As discussed earlier, analyses of cigarette industry documents revealed that advertisers try to associate smoking with independence (Pollay, 2006). A content analysis of cigarette advertising indicated that independence is one of the major themes in Asian markets (Knight & Chapman, 2006). Moreover, cigarette advertising has positioned smoking as an act of independence for women (Anderson, Glantz, & Ling, 2005). Past research has also shown that adolescents initiate smoking as a symbolic gesture to proclaim independence or autonomy (Eckert, 1983; Urberg & Robbins, 1981). Therefore, drawing on the self-construal literature to examine how to more effectively communicate with susceptible adolescents, who have independent self-construals and desire autonomy, is an important task for antismoking campaign designers.

Specifically, findings reported here have important implications for campaign design. Antismoking campaign designers can utilize these findings by targeting different segments of adolescents in a more effective way. For example, when specifically targeting smokers, employing self-referring messages can be a better strategy than using other-referring messages. With the introduction of new media and a more thorough understanding of adolescents' media use behaviors, it is now possible to develop media strategies that could reach the specified target segment and make segmentation strategies effective. For example, Chang's (2005b) nationwide survey showed that adolescent smokers in Taiwan were significantly more likely than nonsmokers to visit online game Web sites and Web sites featuring stories about celebrities. Therefore, these Web sites should be effective vehicles for reaching smokers. On these Web sites, we can place antismoking ad banners featuring self-referring messages that are congruent with adolescent smokers' self-concepts.

Recent research has indicated that self-construals are associated with self-regulatory goals (Lee et al., 2000). Individuals with independent self-construals are oriented toward adopting promotion strategies, whereas individuals with interdependent self-construals are oriented toward adopting prevention strategies. Past research demonstrated that promotion-oriented messages generated better recall and more message elaboration if participants' independent self-construals were more accessible, whereas avoidance-oriented messages generated better recall and more message elaboration if their interdependent self-construals were more accessible (Aaker & Lee, 2001). Within this paradigm, future health communication research can test whether approach-oriented messages, as opposed to avoidance-oriented messages, will work more effectively for smokers or other substance users who are likely to have similar independent self-construals.

It is interesting to note that, even though smokers rated themselves as more independent than did nonsmokers,

smokers' and nonsmokers' ratings of interdependent self-construal did not differ. This is likely due to the fact that this study was conducted in Taiwan, which is characterized as a collectivistic culture (Hofstede, 1980), in which interdependent self-construals are believed to be prototypical views of the self (Markus & Kitayama, 1991). If self-referring ads can be relatively more effective for smokers in a collectivistic culture, it is reasonable to predict that self-referring ads can also be more effective for smokers in an individualistic culture, where self-referring appeals are presumed to be more effective in general.

Ad messages that focus on the self as connected to others or as separate from others have been referred to in the literature by different terms. For example, Perea and Slater (1999) referred to them as collectivist and individualist strategies, whereas Wang et al. (2000) called them connected and separated appeals. This study labeled them self-referring and other-referring ads. It is also important to note that other-referring ads vary in terms of how the others are involved. As reviewed, unhealthy behaviors may involve important others by posing threats to them, arousing their worries, or causing them shame. This article focused on worry. Future studies can explore whether ads focusing on health threats to important others (e.g., secondhand smoke) have effects similar to those found for ads about worry. Moreover, as discussed earlier, important others can be family, friends, or colleagues. In this study and in past research that has manipulated messages regarding how a person is connected to others, family members are usually specified as the important others (e.g., Murray-Johnson et al., 2001; Wang & Mowen, 1997). Future research can compare the differences between referring to family and nonfamily members in other-referring ads.

Last, findings of this study should be interpreted with consideration of its limitations. First, the two experiments used a single-message design, so the results could have been caused by the idiosyncratic characteristics of the message. In addition, the experiments had a posttest design. Future research can extend these experiments by using multiple messages and adopting a pre-post design. Second, because the percentage of smokers among adolescents in the sample was low, the cell sizes for the second experiment and the survey were lopsided, which might have reduced the overall power for detecting significant effects. In addition, dichotomizing participants based on a variable's median, as was done with the self-construal variable, can result in restriction of range and lead to an underestimate of the effect size. Third, only one ad effectiveness index, attitudes toward personal smoking, was measured. This is one of the most important indicators of the effectiveness of antismoking advertisements. Nevertheless, future research can include other effectiveness measures, such as message persuasiveness or smoking intentions. Fourth, classes, rather than individual students, were randomly selected from the sampled school. It would be a better procedure to randomly sample

individual students from the selected school when resources allow. Last, the mechanism triggered by self-congruent messages was not specifically tested in this study. For example, past research indicated that mood enhancement is a possible mechanism that leads participants to respond to self-congruent messages in a more positive way (Chang, 2005a). However, Chang's study focused on consumption products. It is likely that the psychological process triggered by self-congruent health advertising may be different. Future research can explore possible differences between the psychological processes triggered by self-congruent product advertising and health advertising. Regardless of these limitations, this article demonstrated that understanding target audience members' self-construals is key to the success of health communication campaigns.

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