Seeing, wanting, owning: the relationship between receptivity to tobacco marketing and smoking susceptibility in young people

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Abstract
Objective—To assess the effect of the tobacco industry’s marketing practices on adolescents by examining the relationship between their receptivity to these practices and their susceptibility to start smoking.

Design—Paper-and-pencil surveys measuring association with other smokers, exposure to tobacco industry marketing strategies, experience with smoking, and resolve not to smoke in the future.

Setting—25 randomly selected classrooms in five middle schools in San Jose, California.

Subjects—571 seventh graders with an average age of 13 years and 8 months; 57% were female. Forty-five per cent of the students were Asian, 38% were Hispanic, 12% were white, and 5% were black.

Main outcome measures—Exposure to social influences, receptivity to marketing strategies, susceptibility to start smoking.

Results—About 70% of the participants indicated at least moderate receptivity to tobacco marketing materials. Children who are more receptive are also more susceptible to start smoking. In addition to demographics and social influences, receptivity to tobacco marketing materials was found to be strongly associated with susceptibility.

Conclusions—Tobacco companies conduct marketing campaigns that effectively capture teenage attention and stimulate desire for their promotional items. These marketing strategies may function to move young teenagers from non-smoking status toward regular use of tobacco. Our results demonstrate that there is a clear association between tobacco marketing practices and youngsters’ susceptibility to smoke. The findings, along with other research, provide compelling support for regulating the manner in which tobacco products are marketed, to protect young people from the tobacco industry’s strategies to reach them.

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Keywords: adolescents, advertising, smoking initiation

Introduction
PURPOSE OF THE STUDY
In 1996, the US Food and Drug Administration issued regulations designed to reduce the illegal sale of tobacco products to young people and to reduce the appeal of tobacco use by restricting the manner in which the tobacco industry markets its products.1 In his State of the Union address on 4 February 1997, President Clinton affirmed his administration’s resolve to ban the advertising and marketing of cigarettes to young people.2 These dramatic actions reflect the wide citizen concern about tobacco use in teenagers and the perceived actions of the tobacco industry to promote its products to children.3 4

Federal recognition and response are appropriate given the current situation. Teenage smoking rates in the United States have been rising over the past four years after a decade of relative stability; smoking rates for high school students rose from 27.5% in 1991 to 34.8% in 1995.5

Given the high level of awareness about the dangers of tobacco, why are teenagers smoking in ever greater numbers? Many cite tobacco advertising as a major contributor to this increase.3 4 The amount being spent by this industry in the United States has more than doubled in a 10-year period, rising to 4–6 billion dollars in recent years.6 As a result, young people see tobacco advertising messages everywhere: on billboards, in stores, in magazines, on clothing, and at community events.7 These ubiquitous images and messages serve as symbolic social influences by conveying to young people that tobacco use is desirable, socially acceptable, safe, healthy, and prevalent in society.4

In an earlier study, we found a significant association between seventh graders’ (aged 12–13) perceived exposure to tobacco advertising and promotions and their experimentation with smoking. This raised the question of whether there might be a relationship between interest and desire for tobacco marketing materials and young people’s susceptibility to smoke—that is, would we find that children who are more receptive to tobacco marketing materials also are more susceptible to smoking?

The goal of the current study is to assess the effect of the tobacco industry’s marketing practices on young adolescents by examining...
the relationship between young people’s receptivity to tobacco marketing strategies and their susceptibility to smoke, while controlling for particular demographics and the social influences of peers and parents who smoke. In this section, we present the framework for the study by reviewing the marketing strategies used to promote cigarettes, teenagers’ receptivity to these strategies, and its relationship to their smoking susceptibility.

MARKETING OF CIGARETTES
Marketing is used to influence consumer behaviour by signalling how a product meets a perceived need. Advertising, such as tobacco advertisements on billboards and in stores, is designed to influence consumer knowledge, attitudes, and beliefs about a product. Promotions, such as teeshirts and lighters emblazoned with brand logos, are intended to stimulate consumer action toward the use of the product. A mix of these marketing types is intended to move consumers through a sequential decision-making process that ultimately leads to selection and regular use of the product.

The decision to use a particular product generally includes the following steps: (a) awareness of, interest in, and shifting attitudes toward a product; (b) desire and intentions to use the product; (c) experimentation with the product; and finally, (d) regular use. It is interesting to note that there are similarities between the process articulated in the marketing literature and the stages of smoking initiation by young people that have been identified in several tobacco prevention research studies: (a) a preparatory stage in which attitudes and beliefs about the benefits and desirability of smoking are consolidated; (b) first attempts at smoking to conform with perceived norms; (c) irregular, experimental use; and finally, (d) addiction.

Tobacco companies use a sophisticated blend of advertising and promotions to effectively communicate the symbolic social value of tobacco use. Symbolic social influences that are behavioural depicter in mass media have been found to play an important role in shaping adolescent tobacco use. Effective advertising is imbedded with product symbolism intended to stimulate particular behaviours. Clothing and other promotional items are intended to serve as a clear link between “me” and the role “I” wish to play.

The tobacco industry’s advertising and promotional products are replete with messages and images that reflect the qualities teenagers value, such as popularity, independence, sexiness, and “coolness”. The marketing approaches imply that these qualities can be achieved by using their tobacco products.

The tobacco companies’ multibillion dollar efforts seem to guide children through a psychological process of product attachment, the outcome of which may increase their susceptibility to smoking. Their advertisements may shift young people’s attitudes and beliefs to view smoking as a means to acquire the above valued qualities. Their promotions may entice them to try on the image of a smoker, which also may resonate with their desired self-image. Their trading stamps, such as Marlboro Miles and Camel Cash, may reflect the companies’ intent to stimulate repeat purchases to build allegiance to their products. This is not a surprising goal because brand loyalty has been found to be established with the first cigarette.

TEENAGERS’ RECEPTIVITY TO TOBACCO INDUSTRY MARKETING
An understanding of consumers is a critical element in the development of marketing strategies. In the past several years, internal tobacco industry documents confirm that manufacturers conducted extensive research on teenage behaviour and attitudes, and used this information to design tobacco marketing that appeals to young people’s psychosocial needs and the stages of initiation of smoking.

To determine if the tobacco industry’s marketing efforts are reaching teenagers, we have developed a receptivity scale. This scale approximates the stages in decision-making processes involved with product use that were discussed above. Our first level, “See”, reflects awareness of tobacco advertising in various venues such as billboards and magazines. Our second level, “Want”, captures aroused interest in and desire for tobacco products, which is reflected in the acquisition of catalogues, mailings, and trading stamps, such as Marlboro Miles or Camel Cash. Our third level, “Own”, reflects the teenager’s identification with the product by trying on the smoker identity via the use of promotional items. Therefore, an assessment of receptivity provides a good indicator of the impact of the tobacco industry’s marketing strategies on young people.

SUSCEPTIBILITY TO START SMOKING
In this study, we examine the association between teenagers’ receptivity to tobacco marketing as described above, and their susceptibility to start smoking. As mentioned earlier, we believe that teenagers do not move in one step from non-smoking to smoking, but rather, proceed through various stages of smoking initiation. Young people are considered more susceptible to smoke if there is an absence of a clear resolve not to smoke in the future; this increases their vulnerability to personal, social, and environmental factors that may prompt experimentation with smoking. Two longitudinal studies have concluded that susceptibility is a significant predictor of smoking initiation in adolescents. Other studies of susceptibility have found associations between levels of susceptibility and liking of advertisements; awareness of and involvement with tobacco promotional items; and receptivity to tobacco advertising.

If we are to succeed in reversing the upward trend in teenage smoking, we need to understand the effect of the tobacco industry’s ubiquitous marketing practices on young people to help us understand how a teenager moves from being a non-smoker to a smoker. This study seeks to add to this understanding by
looking at the association between teenagers' receptivity to marketing and their smoking susceptibility.

Methods

Design

Within intact classrooms, the subjects completed pencil-and-paper questionnaires as part of a larger survey on cigarette advertisements and promotional material. For this study, we assessed the youngsters' association with other smokers, receptivity to the tobacco industry's marketing strategies, and their own experience with, and resolve to smoke or not smoke, cigarettes.

Subjects

This study was conducted with 571 seventh-grade students from five middle schools in San Jose, California. Data collection occurred in 25 randomly selected classrooms and active parental permission was obtained for each student before participation in the study. Fewer than 5% of parents refused to provide permission. The average age of the participating seventh-graders was 13 years and 8 months, and 57% of the sample was female. Forty-five per cent of the students sampled were Asian, 38% were Hispanic, 12% were white, and 5% were black.

Main Outcome Measures

Receptivity to Marketing Strategies

To determine a youngster's level of receptivity to the tobacco industry's marketing strategies, we measured a child's exposure by using the categories See, Want, and Own. These represent a range of receptivity, from low to high, of how responsive or receptive one is to cigarette advertisements and promotions. We assigned students to See if they answered that they sometimes or often saw cigarette advertisements in magazines, on billboards, or at fairs or community events. Students who frequented small groceries, convenience stores, or liquor stores (off licences) were assigned to See, because these types of retail outlets are often replete with pro-smoking promotional strategies as respondents move through various stages of receptivity, from low to high, of how responsive or receptive one is to cigarette advertisements and promotions. We assigned students to Want and Own if they had received a mailing and had a tobacco company promotional catalogue, or indicated a desire for a promotional item from a cigarette company. To be assigned to Own, students not only had to qualify for See but also had to indicate that they owned a promotional item from a cigarette company.

Susceptibility

Lastly, students were categorised by their susceptibility to start smoking—a measure representing smoking experience and resolutions about smoking. To determine susceptibility to start smoking, students provided answers to questions about their experience with smoking and their resolve not to smoke in the future. To assess experience, students responded to the question: "Have you ever tried or experimented with cigarette smoking, even a few puffs?" Therefore, experience represented a minimal amount of actual smoking. In measuring their resolve not to smoke, we considered student responses to the following questions: "Do you intend to try a cigarette soon?", "At any time during the next year, do you think you will smoke a cigarette?", and "If one of your best friends were to offer you a cigarette, would you smoke it?" We then created three susceptibility categories: (a) No experience and resolve not to smoke; (b) Experience and resolve not to smoke; (c) Experience and no clear resolve not to smoke. Students who responded "yes" to either "Have you ever smoked a cigarette every day for at least a month?" or "Do you smoke now?" were classified as current smokers and excluded from these analyses focusing on susceptibility to start smoking.

Analysis

Because we were considering several categorical variables, we determined if there were significant associations by considering the \( \chi^2 \) statistics at a p<0.05 level. We looked at the associations between gender, ethnicity, social influence, receptivity to cigarette advertisements and promotions, and susceptibility. In addition, we applied a proportional odds model to estimate the effects of these variables (gender, ethnicity, social influence, and receptivity) on influencing the odds of being susceptible to smoking. Used in a recent study on susceptibility, the proportional odds model is an appropriate and worthwhile method to use because it takes into account the underlying rank order of the categorical dependent variable.28 29

Results

Table 1 shows the three levels of receptivity to tobacco marketing strategies that were used to stratify survey respondents and the distribution of the respondents into these categories. Almost a third of the sample were in See, 46% were in the Want, and 24% were in the Own category. Only three children (0.5% of the sample) indicated that they had never seen any tobacco advertisements or promotions or
Table 1  Receptivity to the tobacco industry’s marketing strategies

<table>
<thead>
<tr>
<th>Receptivity level</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>See (receptivity level 1)</td>
<td>171</td>
<td>30</td>
</tr>
<tr>
<td>Sometimes see cigarette advertisements in magazines, sometimes see cigarette advertisements on billboards, sometimes go to small grocery stores, convenience stores, or liquor stores (off licences), or sometimes see cigarette advertisements at fairs or community events.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Want (receptivity level 2)</td>
<td>263</td>
<td>46</td>
</tr>
<tr>
<td>Any of the items specified in See and have received a mailing from a cigarette company, have a Camel Cash or Marlboro Miles catalogue, save Camel Cash or Marlboro Miles, or indicate desire for a promotional item from a cigarette company.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own (receptivity level 3)</td>
<td>134</td>
<td>24</td>
</tr>
<tr>
<td>Any of the items specified from See and Want and own a promotional item from a cigarette company.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2  Relationship between sociodemographic factors, social influences, and receptivity to social marketing strategies

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n</th>
<th>See</th>
<th>Want</th>
<th>Own</th>
<th>χ²</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Boys</td>
<td>245</td>
<td>25.7</td>
<td>53.1</td>
<td>21.2</td>
<td>8.30</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td>320</td>
<td>33.4</td>
<td>40.9</td>
<td>25.6</td>
<td>30.29</td>
<td>0.001</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>White</td>
<td>64</td>
<td>46.9</td>
<td>39.1</td>
<td>14.1</td>
<td>11.80</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>30</td>
<td>16.7</td>
<td>56.7</td>
<td>26.7</td>
<td>11.80</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>211</td>
<td>18.5</td>
<td>52.6</td>
<td>28.9</td>
<td>11.80</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Asian</td>
<td>248</td>
<td>36.3</td>
<td>41.5</td>
<td>22.2</td>
<td>11.80</td>
<td>0.001</td>
</tr>
<tr>
<td>Social Influence</td>
<td>No-one</td>
<td>139</td>
<td>52.5</td>
<td>28.8</td>
<td>18.7</td>
<td>73.38</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Parents only</td>
<td>68</td>
<td>29.4</td>
<td>58.8</td>
<td>11.8</td>
<td>11.80</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Friends only</td>
<td>130</td>
<td>22.3</td>
<td>43.9</td>
<td>33.9</td>
<td>11.80</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Parents and friends</td>
<td>169</td>
<td>13.0</td>
<td>59.2</td>
<td>27.8</td>
<td>11.80</td>
<td>0.001</td>
</tr>
<tr>
<td>Susceptibility</td>
<td>No experience/resolve</td>
<td>235</td>
<td>44.7</td>
<td>36.6</td>
<td>18.7</td>
<td>44.84</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Experience/resolve</td>
<td>119</td>
<td>34.5</td>
<td>42.0</td>
<td>23.5</td>
<td>11.80</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Experience/no resolve</td>
<td>141</td>
<td>11.4</td>
<td>56.7</td>
<td>31.9</td>
<td>11.80</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Table 3  Proportional odds model for susceptibility: the effects of sociodemographic factors, social influences, and receptivity to the tobacco industry’s marketing strategies

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>p&lt;</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>−0.54</td>
<td>0.19</td>
<td>0.01</td>
<td>0.58</td>
</tr>
<tr>
<td>Black</td>
<td>−0.10</td>
<td>0.48</td>
<td>NS</td>
<td>0.90</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.93</td>
<td>0.30</td>
<td>0.01</td>
<td>2.53</td>
</tr>
<tr>
<td>Asian</td>
<td>0.30</td>
<td>0.29</td>
<td>NS</td>
<td>1.35</td>
</tr>
<tr>
<td>Parents but not friends smoke</td>
<td>0.11</td>
<td>0.30</td>
<td>NS</td>
<td>1.12</td>
</tr>
<tr>
<td>Friends but not parents smoke</td>
<td>0.10</td>
<td>0.25</td>
<td>0.001</td>
<td>2.98</td>
</tr>
<tr>
<td>Parents and friends smoke</td>
<td>1.09</td>
<td>0.24</td>
<td>0.001</td>
<td>2.98</td>
</tr>
<tr>
<td>Want</td>
<td>0.81</td>
<td>0.22</td>
<td>0.001</td>
<td>2.25</td>
</tr>
<tr>
<td>Own</td>
<td>0.85</td>
<td>0.25</td>
<td>0.001</td>
<td>2.35</td>
</tr>
<tr>
<td>Intercept 1</td>
<td>1.25</td>
<td>0.32</td>
<td>0.001</td>
<td>NA</td>
</tr>
<tr>
<td>Intercept 2</td>
<td>2.53</td>
<td>0.33</td>
<td>0.001</td>
<td>NA</td>
</tr>
</tbody>
</table>

Reference is a white male, whose parents and friends don’t smoke, who is in the See receptivity group.
SE = standard error; OR = odds ratio; NS = not significant; NA = not applicable.

frequented places likely to display such items. We excluded these children from the subsequent analyses and results.

In table 2, the reported bivariate analyses reveal that boys (χ² = 8.30, p<0.05), and blacks and Hispanics (χ² = 30.29, p<0.001) were more likely to report higher levels of receptivity to marketing. In addition, those with more real-world social influences to smoke (having parents or friends who smoked, or both) also reported greater receptivity (χ² = 73.38, p<0.001). Among those who reported having neither smoking parents nor friends, more than half (52.5%) were in See, the lowest receptivity level. In contrast, among those who had parents and friends who smoked, only 13% were in See.

We classified 495 children into three susceptibility levels; the remaining children were either regular smokers (n = 65) or had missing data (n = 11). We observed a significant relationship between susceptibility and receptivity (χ² = 44.84, p<0.001). Those with lower levels of receptivity to tobacco marketing were at the lower levels of smoking susceptibility. Of those seventh-graders who had no experience and a clear resolve not to smoke, 44.7% were in the See group. This contrasts sharply with those children who had experience with and lack of resolve not to smoke, of whom 11.4% were in the See group. The reverse occurs at the higher levels of receptivity where those less susceptible are the least likely to want or own promotional material, and the most susceptible are more likely to want or own such items.

In the proportional odds model, we observed that all the covariates, except some of the ethnicity dummy variables, were statistically significant. Beyond the significant role gender and ethnicity as well as parental and peer smoking played in predicting a teen’s susceptibility, receptivity to tobacco marketing materials also increases the odds that one will smoke. As a group, the regressors predict susceptibility and we observed that the χ² of all the covariates is 130.28 (df=9, p<0.0001). The test for equality of slopes for these variables proved to be non-significant (χ² = 10.93, df = 9, p<0.028).

Table 3 presents the change in odds for being in the higher susceptibility levels. Considering our set of predictors, girls were less likely than boys to have experience with smoking or lack a clear resolve not to smoke, or both. The odds that a Hispanic child had experience or lack a resolve not to smoke, or both, were two and a half times greater than the odds for a white child. Having parents who smoked increased the odds by a factor of 1.12 and having friends who smoked increased the odds by 2.98. The combination of having parents and friends who smoke increased the odds that a child was more susceptible to 5.23. Being in the Want or Own receptivity level increased the odds of being susceptible at similar rates (approximately 2.30 times greater). The odds act in a multiplicative manner such that a Hispanic child whose parents and friends smoked had odds of being in higher susceptibility levels that were 13.23 times greater than if the child was white and had neither parents nor friends who smoked. If that same child owned tobacco promotional material, then the odds that he or she was susceptible would be 31.09 times greater than the odds for a child without these characteristics.

Using the estimated parameter coefficients and intercepts, we calculated fitted probabilities that given children would be in the different susceptibility groups (figure 1). Here, we see that it is highly probable (p = 0.78) that a white boy, whose parents or friends did not smoke, and is in the See category, is in the lowest susceptibility category (no smoking experience and has a clear resolve not to smoke). On the other hand, a Hispanic boy, whose parents and friends smoke, and is in the Own category, has a high probability (p = 0.71) of being in the highest susceptibility category (having experience and lacking a clear resolve to smoke in the future). It should be noted that we also performed these analyses with current smokers included.
as a fourth level to the susceptibility index. The results resemble those encountered in the level 3 susceptibility index, with similar significant bivariate relationships and significant variables in the proportional odds model.

Discussion

This study examines the relationship between receptivity to tobacco marketing materials and susceptibility to start smoking as reported by 571 seventh-graders. The results show that virtually all young people in the study were aware of tobacco advertising, in that more than 99% of them reported seeing tobacco advertising and promotions in a variety of venues. Remarkably, about 70% of the seventh-graders in this study population indicated a level of receptivity to tobacco marketing materials that is greater than the simple awareness of advertising and promotions. Most of these young people said that they received tobacco company mailings, saved Camel Cash or Marlboro Miles, and wanted to own promotional items; this illustrates the obvious appeal of these materials. We suspect that this might be the first step in moving some of these young people along the continuum of decision making toward the use of their products. Only a longitudinal study would allow us to find this out.

There are several limitations to this study. This sample is drawn from two school districts in northern California and is more ethnically diverse than the American population, so it may not be generalisable to the general population. Another potential limitation is that these are self-reported data of exposure to marketing strategies, as well as experience in smoking and intent to smoke. Response bias is possible; however, prevalence rates observed here are similar to those reported in other research.31 Most importantly, these are cross-sectional data; therefore, a causal relationship between advertising and smoking behaviour cannot be determined. Although these data show that a relationship exists between receptivity and susceptibility, it is possible that susceptibility to smoke precedes interest in and receptivity to tobacco advertising. A well-controlled longitudinal study would identify which variable causes the other.

The findings of this study indicate that although parents and peers play a significant role in whether a teenager begins to smoke,
tobacco marketing materials may also have a strong influence. Previously confidential tobacco company records reveal that these companies studied teenagers and used this information to design marketing strategies to move them from non-smoking to smoking status. The results of this study confirm that the massive marketing efforts of the tobacco industry are in fact working: their advertising is noticed, and their promotional items are desired and owned by significant numbers of teenagers. Moreover, teenagers who are more receptive to the sophisticated marketing practices of the tobacco industry are more likely to report experimentation, intent to smoke, or regular use. These findings add to the growing body of research demonstrating the influence of tobacco marketing practices on youngsters’ susceptibility to start smoking.

The results of the study provide a new framework on how to talk with young people about how the marketing strategies of the tobacco industry are designed to move them from non-smoking to smoking status. Of particular benefit is a discussion of the use of promotional items that may bring a consumer closer to the use of a product. In addition, the findings of this and other studies cited here provide compelling support for regulating and overseeing the manner in which tobacco products are marketed, to protect young people from the highly effective strategies of the tobacco industry to reach them.


References

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