

Character Smoking in Top Box Office Movies

Legacy
American Legacy
Foundation®

FIRST LOOK REPORT 18

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Dear Colleague:

Tobacco images in media and marketing are proven to have a negative impact on youth. Despite certain limitations, for example, the 1998 Master Settlement Agreement (MSA)'s prohibitions of paid product placement and youth targeted advertising and promotions, and a long standing ban on tobacco advertising on television and radio, depictions of tobacco and tobacco use are still pervasive in our media.

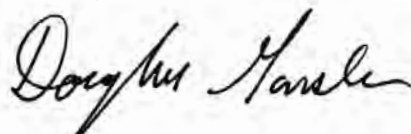
For years, researchers have been looking at the impact smoking images on screen have on our nation's youth. We now know that young adolescents are nearly three times as likely to smoke if they see more smoking in movies. Tobacco images on screen are likely responsible for prompting almost 400,000 children to try their first cigarette every year - almost the same as the number of Americans who lose their lives to tobacco-related disease annually. This **First Look Report on Character Smoking** is the second report in a series to examine the impact smoking has on youth. It sets out how films continue to glamorize smoking in a way that is inconsistent with reality, encouraging kids to emulate their favorite actors (both heroes and villains) and start what often results in a life-long nicotine addiction, disease, and premature death. The American Legacy Foundation and numerous organizations including the American Medical Association (AMA), AMA Alliance, World Health Organization, the American Heart Association, American Lung Association, and the Smoke-Free Movies Action Network have teamed up to shine a klieg light on this problem and propose meaningful ways to address it.

Public health and tobacco control advocates have long pressed for change, and now more than 22,000 parents nationwide are sending Hollywood a message through the AMA Alliance's national ScreenOut! grassroots campaign: keep smoking out of youth rated films. Important voices from the health and medical communities are weighing in as well. The Institute of Medicine released a landmark report in May 2007, **Ending the Tobacco Problem: A Blueprint for the Nation**, which recommended aggressive action to counter the effect smoking in movies has on youth. The President's Cancer Panel 2006-2007 Annual Report issued in August recognized the problem as well and called for immediate action on it. Experts and policy makers are in agreement that more can be done. Simply put, since 80 percent of adult smokers begin before the age of 18, we will have gone a long way toward saving and extending young lives if we can eliminate smoking in G, PG and PG-13 films.

The movie industry is also taking positive steps in the right direction. The Motion Picture Association of America (MPAA) has announced that it will consider depictions of smoking when rating movies. We will be watching carefully to see how this actually plays out. In addition, several movie studios, including Disney and Universal, have stated that they will limit tobacco imagery in certain movies. Studios are exploring adding anti-tobacco PSAs to their DVDs to counter the impact of smoking imagery in the movies and a few have started actually doing so. In particular, the Weinstein Company has released numerous DVDs with the American Legacy Foundation's iconic and proven successful **truth**® campaign messages aimed at arming youth with the knowledge they need to reject tobacco.

The public health and medical communities, public policy makers, and decision-makers in the entertainment industry - can and must work together to save lives. Together we can provide our children the best entertainment Hollywood can produce, free of the tobacco depictions that will rob all too many of them of their health and long life.

Thank you,



Douglas F. Gansler
Attorney General of Maryland



Cheryl G. Heaton, Dr.P.H.
President & CEO
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Executive Summary

A STRONG BODY OF SCIENTIFIC EVIDENCE now links exposure to smoking in movies with adolescent smoking, identifying it as a key risk factor.¹ Given this link, it is important to examine the way movies portray smoking and to monitor how often smoking occurs in movies over time. With support from the National Cancer Institute and the American Legacy Foundation, researchers at Dartmouth Medical School have conducted an extensive content analysis of 1000 movies, the top 100 box office hits each year from 1996-2005. This Legacy First Look Report examines how smokers are portrayed in these movies and describes trends in movie smoking, by movie and by movie character.

Findings

- Our data about movie character smoking show:
 - The portrayal of smokers is often unrealistic, with affluent male characters accounting for a much larger proportion of the tobacco users in movies than in the U.S.;
 - Smokers in movies are rarely portrayed as having a motive for smoking, and smoking status tends not to differentiate types of characters;
 - Tobacco use in movies is not related to box office success.
- Our data on movie trends in the top 100 box office hits from 1996-2005 show:
 - Although the percent of movies with tobacco imagery has declined, the majority of movies continued to depict tobacco use or imagery, with 56% of youth rated movies in 2005 containing smoking.
 - Smoking delivered by youth rated movies as an aggregate increased by 12%, from 238 episodes in 2004 to 267 in 2005.



Introduction

ON MAY 10, 2007, the Motion Picture Association of America (MPAA) announced that adult smoking would be subject to consideration in its movie ratings system, adding this category to sex, violence and adult language, the only behaviors considered since the inception of the ratings system in 1968. The language of the announcement made it clear that rating smoking was a work in progress and that the MPAA had not arrived at specifics regarding how they would determine that smoking in movies was “pervasive” or “glamorous” or whether there were “mitigating” circumstances.² Nor did the announcement state how something like pervasive smoking would alter the rating of the movie. The vagueness of the announcement drew criticism from health organizations including the American Heart Association, the American Medical Association, the American Academy of Pediatrics and the American Legacy Foundation.

The American Legacy Foundation and Dartmouth Medical School have partnered together to publish a series of First Look Reports focused on smoking in the movies, of which this is the second report. There is now sizable published literature pointing to movie smoking as a key risk factor for trying smoking among adolescents, with four published independent U.S. samples: a California sample,³ a Northern New England sample,⁴ a North Carolina sample⁵ and a U.S. national sample.⁶ In addition, follow-up of the U.S. sample indicates that movie smoking predicts youth progression to established adolescent smoking.⁷ Finally, Hollywood movies are distributed internationally, and

exposure to smoking in these movies has been shown to predict smoking in European adolescents.⁸ In the first of this series,⁹ we proposed that, because movie smoking exposure is a key risk factor for teen smoking, movie smoking prevalence should be monitored over time. The first report, released in July 2006, focused on the prevalence of smoking in the movies, demonstrating an overall downward trend from 1996-2004 in the amount of tobacco use portrayed in the movies. Although this represented a welcome decline in movie smoking, the drop was largely accounted for by a drop in the number of R rated movies in the top 100 and therefore a drop in R rated movie smoking, while smoking delivered by the aggregate of movies intended for youth audiences (G, PG, and PG-13) showed little decline over time. The current report addresses those trends, updating them to include movies released in 2005. In addition, it focuses on movie characters. In justifying movie smoking, actors and directors have stated that they use smoking to enhance certain character traits and to paint a more realistic picture of the world. For instance, Kori Bernards, a spokeswoman for the Motion Picture Association of America said, in defense of smoking in movies, “As artists, people need to be able to create pictures that represent real life.”¹⁰ If that were the case, we would expect that the demographics of movie characters would reflect the real world and smokers would reflect the demographics of real-world smokers (e.g., more likely to be of lower socioeconomic status). We examine evidence supporting these assertions by focusing on the demographic characteristics of major



characters overall and of characters that smoke. In addition, we explore the ways smoking might be used to enhance plot and character development. Finally, we examine the relationship between smoking in movies and box office success.

Data and Methods

Content Analysis: A team of two trained content coders coded the movies on an extensive list of variables. Among these variables was information about the production of the movie, including the production companies, distributors, producers, directors and cast, as well as information about the genre of the movie and major themes. In addition, all tobacco use and imagery was coded in detail, including the counts of tobacco depictions, brand appearances, the type of tobacco used and characteristics of tobacco users. After first watching the movie to identify key scenes with smoking, the coders then watched it a second time, counting the tobacco depictions on screen (“occurrences”). Tobacco “occurrences” were divided into “episodes”, which included the handling or use of tobacco by a major or minor character, and “incidents,” which included background use of tobacco in a scene. Incidents included background smoking by secondary characters, or the placement of tobacco products, such as a Marlboro display in the front of a store. Whenever there was any doubt or disagreement among coders as to whether tobacco appeared in a scene, they were instructed to be conservative and not count it. Coders also identified tobacco brands, ranging from tobacco signs and displays, to logos on clothing, identifiable cigarette packages and the mention of a brand by name. Coders were instructed to identify a brand only if reasonably certain of the brand name. The coders also recorded any time a character was portrayed as having a motivation for smoking. The motives coded were: being

angry, anxious, rebellious, bored, or in a sad mood; to fit in, to look cool, to be disobedient, to appear older, because of peer pressure, to act tough, or to appear sexy. We also recorded the situations in which they smoked. The coders recorded any time a character engaged in any of the following activities while using a tobacco product: socializing, thinking or passing time (including being pensive or taking a break) or celebrating (including helping someone else celebrate). The demographic characteristics of the major characters such as gender, age, race, socioeconomic status and occupation (e.g., student, professional, criminal) were recorded. Finally, character type (e.g., villain, action hero, romantic lead) was also recorded.

Sample Frame: The current report includes the top 100 box office hits each year for the ten-year period from 1996 to 2005. Box office success was determined by overall box office receipts at the end of the first quarter of the following year. Identification of brand appearances was enhanced and expanded in 1999. Therefore, we report trends for brand appearances starting in 2000.

Trend Analysis: In order to explore the various portrayals of tobacco use and their potential impact on youth, we conducted a trend analysis of various indicators over time. Where appropriate, the trend analyses controlled for movie rating as determined by the Motion Picture Association of America. We divided ratings into R rated and youth rated (which included G, PG, and PG-13 rated movies).

Results

WE DESCRIBE THE RESULTS for movie characters and their roles, with the inclusion of a few tables and figures. Detailed information for each of the topics discussed below may be found in the appendix.

Movie Characters

Movie characters—general demographics

We identified 6645 major characters in the ten-year sample of 1000 movies. Appendix 1 shows the demographic characteristics of the major characters. Adults between the ages of 26 and 49 comprised 55% of all characters. Movies rarely depicted middle-aged characters and almost never showed anyone over the age of 65. This contrasts sharply with the fact that populations in most developed countries are aging rapidly, with some 12% percent of U.S. citizens being age 65 and older.¹¹ With respect to gender, only 30% of the characters were female, another finding that contrasts sharply with reality, as 51% of the U.S. population is female.¹¹ More than three-quarters (76%) of the major characters were White, 13% were Black, with 3% being Hispanic and 2% Asian. This contrasts sharply with U.S. census figures by slightly over representing Whites, somewhat under representing Asians, and dramatically under-representing Hispanics. On the other hand, Blacks were included at a proportion that almost exactly corresponds to their representation in the U.S. population. The actual racial distribution in the U.S. is 75% White, 12% Black, 4% Asian, and 15% Hispanic. Another area in which the movie world contrasts sharply with reality is in the portrayal of socioeconomic status; over 70% of major characters were portrayed as

being in the middle or upper classes. According to 2005 household income estimates from the U.S. Census, it is estimated that middle to upper income families comprise only 47% of the population.

Movie characters—smoking rate and trend

Of the 6645 major characters, 1202 (18%) used tobacco, and the majority of these were depicting smoking. As has been reported previously,¹² the smoking rate among characters corresponded roughly to that of the U.S. population throughout this period of observation (21%),¹³ despite the demographic differences discussed below.

Movie characters—smoker demographics

To the extent smokers in movies reflect the general demographics of movie characters, they will likely misrepresent smokers in the population at large. In Appendix 2, we see that this was true for character gender, in that the majority of the smoking in movies was depicted by males. In this sample of movies, 917 male characters smoked, accounting for 76% of the character smoking. Although this misrepresentation is largely because the majority of movie characters were male, it is also true that a larger percent of male characters (20%) smoke (female smoking rate = 14%). When examined by race, the majority of characters who smoked in the top box office hits were White (82%). As with gender, this was because the majority (76%) of characters were White. Smoking rates were about the same within each racial

category except for Hispanics, who were more often depicted as smokers, and Asians, who were less often depicted as smokers.

Adult characters accounted for the majority of tobacco use in movies. Ninety-four percent of characters who used tobacco were aged 18 or over, whereas only 4% of smoking characters were under 18. Approximately 35% of the smoking characters were aged 36-49, comprising the largest single category of smoking characters. That the majority of tobacco use was among adults was partly due to the fact that there were more adult characters than there were youth characters. Within age category, however, adults were also more likely to smoke than youth characters. For instance, 23% of characters between the ages of 36 and 49 were depicted as using tobacco, compared with 4% of those under age 14 and 13% of 15-17 year olds. The combined influence is illustrated in Figure 1, which, in showing the number of characters and number of smoking characters by age, reveals that the majority of smokers in movies are between the ages of 26 and 49, with few elderly and very young smokers. Thus, movie watchers see smoking depicted mainly as a younger adult behavior.

The majority of characters in movies were middle or upper class, and therefore, the majority of smoking characters in movies were middle or upper class. Thirty-five percent of the characters who smoked were middle class, and 37% were either upper middle or clearly upper class. When smoking rates were examined by socioeconomic status, another misrepresentation became apparent; smoking was portrayed at fairly equal rates across SES categories. The contrast with reality is illustrated in Table 1, which shows that in the U.S., smoking rates are almost 4 times higher for those with less education vs. those with more education. These character misrepresentations combine to make smoking in movies look like a behavior that affluent young adults engage in, when just the opposite is seen in reality.

Figure 1: Number of characters and smoking characters by age.

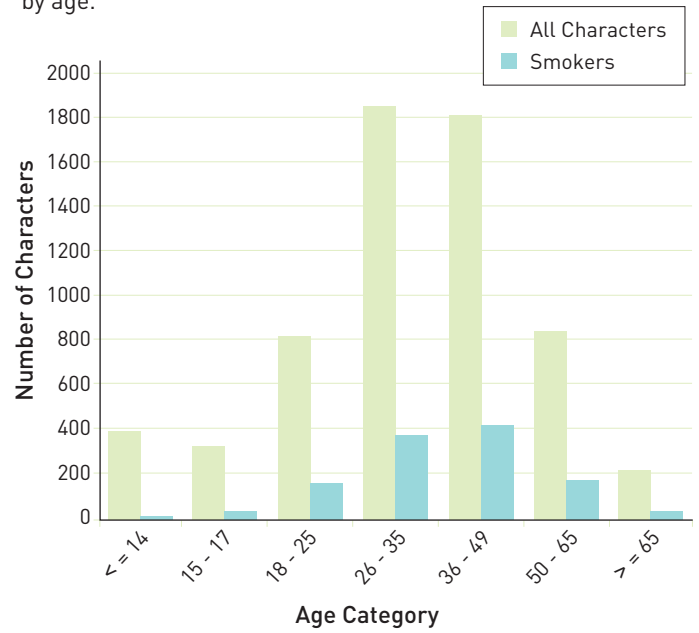


Table 1: Comparison of Tobacco use in Movies by Character SES with the Smoking in the US by Education*

Movie Character Tobacco Use by SES		Smoke in the U.S. by Education ¹⁴	
	Percent Who Use Tobacco		Percent Who Use Tobacco
Lower Class	24.1%	No Highschool Diploma	27.6%
Lower Middle Class	23.4%	Highschool Diploma	25.6%
Middle Class	18.1%	College graduate	12.1%
Upper Middle Class	18.0%	Graduate Degree	7.2%
Clearly Upper Class	20.8%	Graduate Degree	7.2%

* We recognize that socioeconomic status is a combination of many factors and that the comparison to education is not an exact one. The precise education or income level of movie characters is not always apparent, and coders make a judgment about the socioeconomic status based on the information available, including education. Because smoking rates in the U.S. population are available by education level, not by socioeconomic status, we chose to use those data for comparison. Though not an exact comparison, it is clear that movies misrepresent smoking when it comes to socioeconomic status.

Movie characters—occupation

Movies do not tell stories about average people. The most common occupational categories for movie characters are professionals and criminals, and because of this, they account for more smoking than any other category, with 16% of movie character smoking done by professionals and 15% by criminals. (See Appendix 2). Within occupation, tobacco use was most prevalent among criminals (32%), the unemployed (30%) and those working in the arts (26%). Tobacco use was least common among students (8%), those in white-collar professions (14%) and among housewives (15%). Those who were portrayed as having the heaviest patterns of tobacco use were terrorists, with a mean of 6 episodes per character (among those who use), and the unemployed, who had a mean of 5 tobacco use episodes per character. Smoking rates were similar among many occupations, with sports stars smoking at similar rates as terrorists.

Character role

Appendix 3 presents character smoking by character role. Most smoking was by “friends” and “regular people” because those were the most common character type categories. Within category, the two character roles most often portrayed as using tobacco were substance users and sex kitten/studs. However, because they were not common character types, these characters did not represent the majority of smoking characters. Smoking rates were fairly similar across diverse character types. For example, mentally ill characters smoked at similar rates to leaders and comedy figures; villains at similar rates to entertainers.

Major character smoking—motives and situations

With an interest in learning the kinds of information youth may be absorbing when they see characters smoke, we examined characters’ motives for smoking. Contrary to our expectations, for the majority of characters that

smoked (65%), the coders did not perceive any explicit motive - and therefore any obvious plot or character development reason - for their smoking in that scene.

Among the 418 characters that smoked and were coded as having a motive for doing so, the three most common motives were 1) anxiety (12% of characters that used tobacco), 2) anger (10%) or 3) to look tough (8%). (See Table 2). The two least frequently portrayed motives were using tobacco because of peer pressure (<1%) and using to look older (1%), perhaps because so few young people were portrayed as using tobacco in the movies.

Table 2: Top Motives for Smoking

	They are Anxious	They are Angry	To act Tough	No Motive
Number of Smoking Characters with this Motive	144	117	94	761
Percent of Smoking Characters who Smoke with this Motive	12	9.8	7.8	65.1

Table 3: Tobacco Use by Situation

	Celebrating	Thinking or Taking a Break	Socializing	No Situation
Number of Characters Who Smoke in this Situation	81	285	306	647
Percent of Smoking Characters Who Smoke in this Situation	6.7	23.7	25.5	53.8

Another way to examine how smoking is portrayed in the movies is to focus on the situations in which characters smoked. In the content coding process, we recorded any time a character used tobacco while celebrating, socializing or thinking/taking a break. Again, we were surprised how infrequently characters smoked in any of these situations. Of the 1202 characters that smoked, less than half (46%) of them did so in one or more of these situations. Taking a break or socializing were more common situations (Table 3), and smoking was only rarely portrayed in the context of celebrating.

Finally, we examined the relation between the amount of smoking in a film and its box office success. Within MPAA rating, there is no correlation between box office success and the number of tobacco occurrences.

Trends in Tobacco Use

We end by reporting on trends as we did in July 2006 in *Legacy's First Look Report 16: Trends in Top Box Office Movie Tobacco Use 1994-2004*, by adding data for the top 100 box office hits in 2005. We present 4 key indicators– the percent of movies each year with tobacco use or imagery, the total number of episodes of character tobacco use delivered by the top 100 box office hits each year, the total number of brand appearances delivered by the top 100 box office hits each year, and the percent of characters that smoke in the top 100 box office hits each year. The trend graphs illustrate the trend overall and also trends by rating – youth (G, PG, and PG-13) vs. R rated movies – from 1996-2005. Figure 2 shows the percent of movies that contained any tobacco imagery. Across all movies, there was a decline from 91% in 1996 to 63% in 2005. Among R rated movies, there was a decline from 95% in 1996 to 85% in 2004, with a non-significant increase to 87% in 2005. The percent of youth rated movies with tobacco use fell from 88% in 1996 to 56% in 2005. The ten-year downward trend for percent of movies with tobacco imagery was statistically

significant overall and for youth rated movies ($ps<.001$), but not for R rated movies. Nevertheless, the majority of movies aimed to include the youth segment in 2005 still contained tobacco imagery.

Figure 3 shows the number of tobacco episodes delivered each year by the top 100 box office hits. There was an overall decline from over 650 in 1996 to about

Figure 2: Percent of Movies with Tobacco Imagery, by year of release and rating

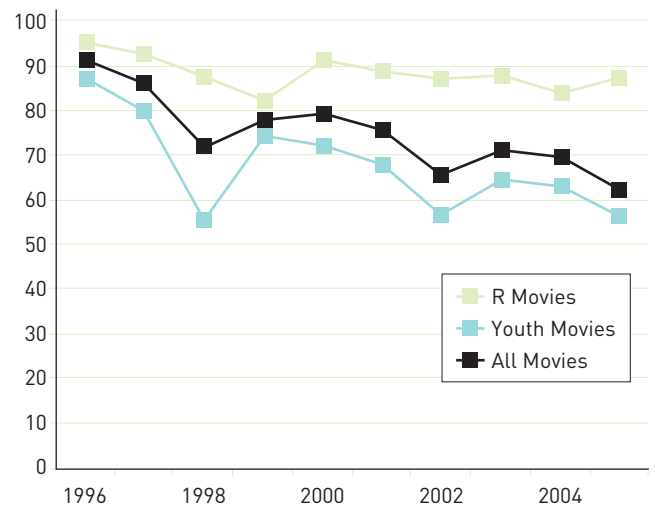
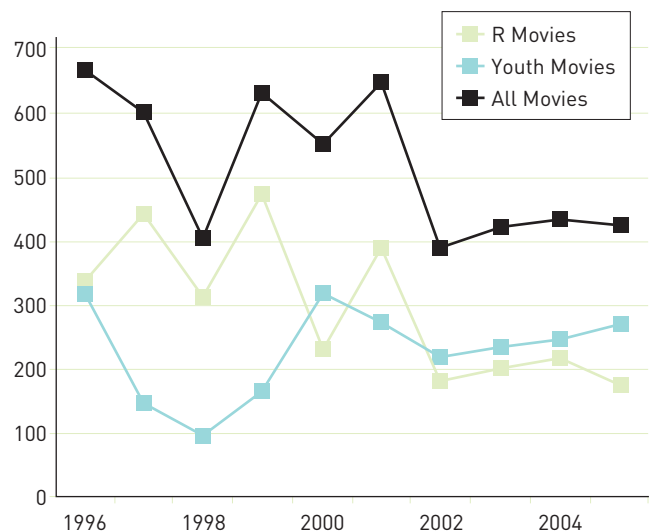


Figure 3: Number of Tobacco Episodes, by year of release and rating



400 in 2002. The number of tobacco episodes remained relatively level through 2005, increasing by about 10% from 2002-2005. The number of episodes delivered by youth rated movies increased by 27% over the same period, and increased by 12% in the last year studied, from 238 in 2004 to 267 in 2005.

Figure 4 shows the number of brand appearances per year over the same period. Brand appearances have declined to fewer than 30 in the top 100 box office hits of 2005. Although we noted last year that overall there was a downward trend in tobacco brand appearances over the study period, there has been no change in the number of brand appearances since 2002, and as many brand impressions were delivered by youth rated as by R rated movies. The decline in brand appearances over time was significant overall and for youth rated movies ($p < .05$), but not for R rated movies.

Trend in character smoking

Next, a new variable is introduced that was not included in the 2006 Legacy report: the percent of major characters that smoke. As seen in Figure 5, the percent of adult characters that smoke has steadily declined over the past ten years. Whereas 26% of major characters in 1996 smoked, only 18% of them did in 2005. The percent of characters that smoke is much higher in R-rated movies compared with youth rated movies.

Figure 4: Number of Brand Appearances, by year of release and rating

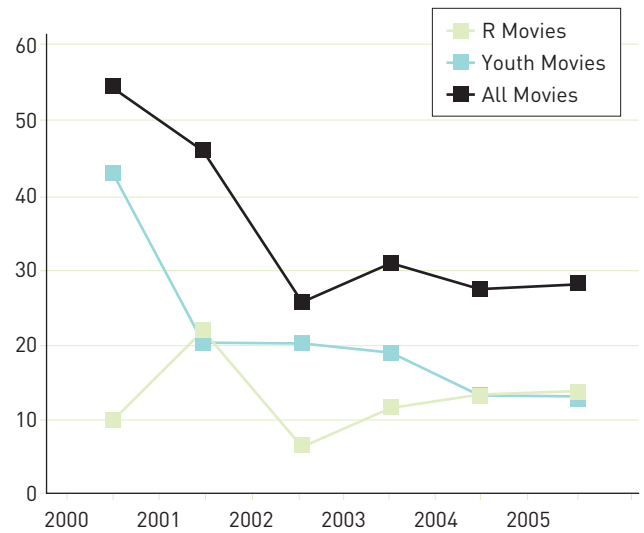
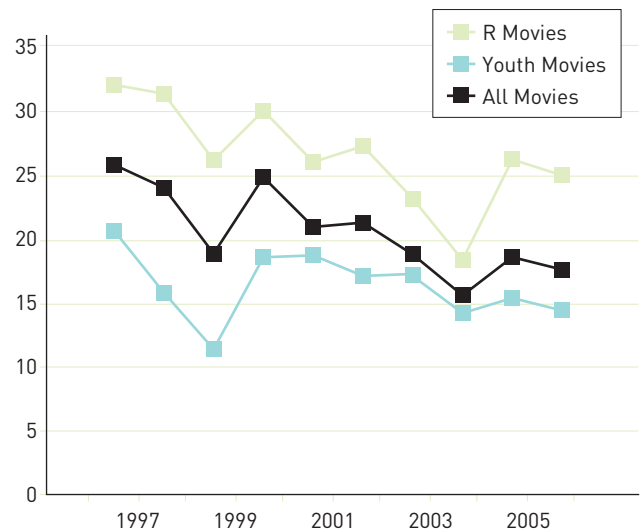


Figure 5: Percent of Adult Characters that Smoke, by year of release and rating





Summary

THIS REPORT WAS DESIGNED to assist public health groups in monitoring depictions of smoking in movies. The report offers an in depth view of movie smoking at the movie and the character level. The demographics and context of character smoking calls into question the claim that the inclusion of smoking in movies is used to depict reality or is necessary for character development. Through our examination of character smoking in the top box office hits of the last ten years, we found little evidence that movie character smoking serves either purpose. First, movie characters did not reflect the demographics of real life, and thus, as has been noted previously,^{15 16} the demographic characteristics of smokers in movies did not represent the realities of smokers in the population. For example, almost 70% of major movie characters were men. In addition, whereas Black characters seemed to be portrayed at a level consistent with the U.S. population, Hispanic characters were rarely depicted (3%), even though they represent almost 15% of the contemporary American population. It is not clear to us why the movie industry would portray equal representation for Blacks but ignore two major demographics, Hispanics and women, but this fact severely skews its representation of the population and, as a result, smokers. Secondly, within each demographic category, rates of smoking were not reflective of smoking prevalence, and this further skews the movie smoking reality from real life. This leads to a picture of smoking that emphasizes smoking by affluent men, obscuring the fact that smoking is more often a

behavior adopted by the poor, and one seen nearly as often in women as in men. This misrepresentation of the socioeconomic status of smokers may give adolescent viewers the mistaken impression that smoking is associated with affluence and prestige and could, in part, explain the impact of movies on behavior. Clearly, the demographics of smoking characters does not support the conclusion that movie smoking reflects reality.

In addition, these findings fail to support a second industry argument that the inclusion of tobacco use is important for character development. In our evaluation of motivations for movie smoking, we were surprised at how infrequently smoking seemed to serve this purpose. Generally, real smokers are motivated to smoke on a very regular basis due to pharmacological withdrawal,¹⁷ but this was not often depicted in the movies. In fact, only 35% of the time did movie characters appear to have any motivation to smoke. When smoking was motivated, it was most commonly to relieve anxiety, a motivation presented in tobacco industry marketing. For example, analysis of industry documents found that tobacco marketing capitalized on the idea that nicotine is effective in battling stress to target young adults in transitional times and places or stressful “life passages,” such as taking up or leaving a job, entering college or military, and spending time in bars. Once adolescents began using nicotine to alleviate their stress, the hope of the industry was that they would adopt smoking into their regular routine.¹⁸ It is concerning that this message is also being communicated in movies seen by adolescents.

In contrast to the claim that smoking is adopted by only certain types of characters (e.g., claims that smoking in movies tends to be associated with villains),¹⁰ smoking status did not appear to differentiate one type of character from another. Characters that our movie coders classified as “friends” or “regular people” did much of the smoking in movies, not bad guys or crooks. Although we recognize there may be other ways smoking is used to develop character or enhance the plot, analyses of the data we had available suggests that a large share of the tobacco use in these movies could be eliminated without greatly affecting plot or character development.

Finally, the amount of smoking in movies is not correlated with box office success, indicating that it is not crucial to include tobacco use for a film to be commercially successful. In summary, much of the smoking depicted in movies is unrealistic and may not be necessary for either plot or character development. In addition, the amount of smoking is not related to the commercial success of the film, suggesting that a further decrease in the amount of smoking in movies would not be expected to affect the commercial success of the movie.

Our examination of trends shows that smoking in movies has declined since 1996; nevertheless about two thirds of all movies and 56% of youth rated movies still depict smoking. In addition, youth movies, in aggregate, delivered about 27% more smoking in 2005 than they had in 2002. Indeed, they delivered more than R rated movies in 2005. This is because a much higher share of the top 100 box office hits were youth rated in 2005 than they were in 1996, a trend that seems to be increasing potential youth exposure to movie smoking over time. The number of tobacco brand appearances, which had been declining steadily since 2000, has remained stable since 2004. When movie smoking trends were viewed at the character level, there was a clear downward trend in the proportion of characters that smoked.

Appendix

Appendix 1: Table of Character Demographics

	Number of (Percent of Characters)
Gender	
Male	4597 (69.2%)
Female	2026 (30.5%)
Race	
White	5061 (76.2%)
Black	841 (12.7%)
Hispanic	178 (2.7%)
Asian	147 (2.2%)
Other	418 (6.3%)
Age	
14 and under	393 (6%)
15-17	325 (4.9%)
18-25	817 (12.3%)
26-35	1870 (28.1%)
36-49	1812 (27.3%)
50-65	855 (12.9%)
65 and over	221 (3.3%)
SES	
Lower class	174 (2.6%)
Lower middle class	632 (9.5%)
Middle class	2353 (35.4%)
Upper middle class	1453 (21.9%)
Clearly upper class	895 (13.5%)

Appendix 2: Table of Smoking Character Demographics

	Number (Percent) of Characters Who Use Tobacco	Percent Within Category Who Use Tobacco	Mean Number of Tobacco Episodes per Character
Gender			
Male	917 (76.3%)	19.9%	3.7
Female	285 (23.7%)	14.1%	3.2
Race			
White	992 (82.5%)	19.6%	3.6
Black	136 (11.3%)	16.2%	3.1
Hispanic	41 (3.4%)	23%	3.3
Asian	16 (1.3%)	10.9	3.8
Other	3 (0.3%)	15%	4.5
Age			
14 and under	9 (0.8%)	4.1%	2.3
15-17	41 (3.4%)	12.6%	3.0
18-25	139 (11.6%)	17%	3.4
26-35	365 (30.4%)	19.5	3.6
36-49	419 (34.9)	23.1%	3.5
50-65	166 (13.8)	19.4%	3.7
65 and over	42 (3.5)	19%	3.8
SES			
Lower class	42 (3.5%)	24.1%	5.1
Lower middle class	148 (12.3%)	23.4%	3.8
Middle class	425 (35.4%)	18.1%	3.3
Upper middle class	261 (21.7%)	18%	3.3
Clearly upper class	186 (15.5%)	20.8%	3.5
Occupation			
Criminal	182 (15.1%)	32.4%	4.0
Unemployed	34 (2.8%)	29.6%	5.0
Arts	133 (11.1%)	25.7%	3.9
Military	85 (7.1%)	22.8%	3.4
Law enforcement	128 (10.6%)	22.4%	3.4
Terrorists, mercenaries	6 (0.5%)	22.2%	6.0
Service industry	91 (7.6%)	20%	3.5
Sports	25 (2.1%)	20%	3.5
Retired	11 (0.9%)	19%	3.4
Professional	193 (16.1%)	16.2%	3.3
Health care	21 (1.7%)	15.8%	3.0
Housewife	27 (2.2%)	15.1%	2.6
White collar	31 (2.6%)	14.2%	3.1
Student	59 (4.9%)	8%	3.0

Appendix 3: Table of Smoking Character Role

	Number (Percent) of Characters Who Use Tobacco	Percent Within Type Who Use Tobacco	Mean Number of Tobacco Episodes per Character
Substance abuser	13 (1.8%)	46.4%	3.9
Sex kitten/stud	11 (1.6%)	24.4%	2.8
Villain	107 (15.1%)	21.7%	3.6
Celebrity/entertainer	13 (1.8%)	21%	4.0
Powerful predator	11 (1.6%)	20.8%	2.9
Alienated	8 (1.1%)	20%	3.5
Unpopular	7 (1%)	19.4%	3.6
Professional	68 (9.6%)	18.6%	3.1
Regular person	130 (18.4%)	17.6%	4.0
Helpless victim	5 (0.7%)	16.7%	2.0
Leader	39 (5.5%)	15.3%	4.0
Comedy Figure	26 (3.7%)	15.1%	3.7
Mentally ill	3 (0.4%)	14.3%	3.7
Action Hero/ine	30 (4.2%)	12.6%	3.3
Romantic lead	29 (4.1%)	11.9%	2.6
Supporter/provider/caretaker/friend	151 (21.4%)	11.9%	3.6

Appendix 4: Reliability of the Content Analysis Measures

Reliability of the data: Ten percent of the movies were randomly selected to be double-coded. The purpose of double coding is to assess inter-rater reliability. In addition, the content coding supervisor meets regularly with the coders to resolve discrepancies and enhance the quality of the coding. Generally, the coders have high agreement on the variables reported. For example, inter-rater reliability for whether or not a character smokes is .97, for character gender is .96 and for character race is .89. For details of the technical aspects of the coding system and data management, see Trends In Top Box Office Movie Tobacco Use 1996-2004.⁹

Appendix 5: Trend Analyses

Fig	Dependent Variable	Rating Covariate?	Years Covered	N	Coefficient (95% CI)	P-value
1a	0 = no tobacco 1 = tobacco	Yes	1996 - 2005	1000	.88 (.84, .93)	<.001
1b	0 = no tobacco 1 = tobacco	R-rated only	1996 - 2005	1000	.92 (.82, 1.04)	.18
1c	0 = no tobacco 1 = tobacco	Youth-rated only	1996 - 2005	1000	.89 (.84, .94)	<.001
2a	Summed episodes	No	1996 - 2005	10	-.593 (-44.99, 2.29)	.07
2b	Summed episodes	R-rated only	1996 - 2005	10	-.721 (-47.84, -5.80)	.02
2c	Summed episodes	Youth-rated only	1996 - 2005	10	-.671 (-13.31, 24.24)	.52
3a	Summed brand appearances	No	2000 - 20005	6	-.82 (-9.78, -.22)	.04
3b	Summed brand appearances	R-rated only	2000 - 2005	6	-.027 (-4.47, 4.30)	.96
3c	Summed brand appearances	Youth-rated only	2000 - 2005	6	-.83 (-9.55, -.28)	.04
4a	% of adult characters that smoke	No	1996 - 2005	10	-.79 (-1.44, -.33)	.006
4b	% of adult characters that smoke	R-rated only	1996 - 2005	10	-.67 (-.95, -.38)	.03
4c	% of adult characters that smoke	Youth-rated only	1996 - 2005	10	-.33 (-1.74, -.10)	.35

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