

# Popular Films Do Not Reflect Current Tobacco Use

## ABSTRACT

This study examined trends in tobacco use in a random sample of 2 of the 20 top-grossing US films each year from 1960 through 1990 (62 films). The overall rate of tobacco use did not change. Films continue to portray smokers as successful, attractive White males. Smoking groups became larger, smoking alone declined, hostility and stress reduction were increasingly associated with smoking, and smoking by minor characters increased. Although smoking among elite characters fell, it remained nearly three times as prevalent as in actual population data during the 3 decades. Events involving young people more than doubled. Films do not accurately represent smoking in the United States. (*Am J Public Health*. 1994;84:998-1000)

Anna Russo Hazan, PhD, MPH, Helene Levens Lipton, PhD, and Stanton A. Glantz, PhD

### Introduction

Movies both shape and reflect social values regarding tobacco use. The public believes that there is less smoking than before in movies in the last 5 years.<sup>1</sup> We investigated whether this perception is accurate by studying tobacco use in popular films since 1960.

### Methods

#### Sample Selection

Two feature-length films on videocassette for each year from 1960 through 1990 were randomly selected from the 20 top money-making films each year<sup>2</sup> (62 films). Eight films (13%) were not available on videocassette and were replaced at random with another film from the same year. (Of these eight films, half were from the Disney corporation, which holds back certain films from the video market as a sales strategy.<sup>3</sup>)

#### Data Collection

The title, year of release, rating (G, PG, PG13, R, or X), genre,<sup>4</sup> target audience, and historical era of each of the selected films were recorded. (Ratings for age suitability did not occur until 1968, when the current system was instituted by The Motion Picture Producers and Distributors of America.<sup>5</sup> Films released before 1968 [26%] were unrated. Of the remaining 46 films, 33% [15] were rated G, 52% [24] were rated PG or PG13 [parental guidance suggested], and 15% [7] were rated R [under age 17 not admitted without adult companion]. No X rated [under age 17 not admitted] films appeared in the sample.) The presence of tobacco events in each 5-minute interval of film time was documented upon viewing each videocassette. "Tobacco events" included implied or actual consumption of tobacco, paraphernalia, (ashtrays and matches), talking about tobacco, "no smoking" signs, and tobacco product logos. A per-film reliability ratio of .92 (SD = .07) was computed by comparing the consistency of observations between two coders who viewed the same 15 films independently.

To document tobacco events within each 5-minute interval, 25 variables were coded for every event, including smoker characteristics (e.g., age, sex, role), tobacco characteristics (e.g., product, brand names, tobacco paraphernalia), and scene characteristics (e.g., number of smokers, health messages). Smokers' characteristics were coded when an individual participated in actual smoking or when there was a clear intention to smoke. Intent to smoke was grouped with actual smoking in the analysis, as in prior studies.<sup>6</sup> When only paraphernalia or nonsmoking events were involved, no smoker characteristics were coded.

#### Statistical Methods

We examined the rate per minute of film at which tobacco events occurred by generating 149 variables from different responses to the original 25 variables (codes and categories of variables are available on request). This rate equaled the total number of times an event occurred divided by the length of the film. Rates were computed because films became shorter by 0.8 minutes per year over the 31-year study period ( $P < .01$  by linear regression). We tested for changes over time in the rates of these tobacco events by computing Spearman rank order correlations between the tobacco event rates occurring in each film and the year of release. (The unit of analysis was the film.)

To test for changes decade to decade, we evaluated the characteristics of each film using the original set of 25 variables and cross tabulated the frequency with which each of these characteristics appeared by the decade in which the film was released (1990 was considered

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At the time of the study, the authors were with the Institute for Health Policy Studies, Department of Medicine, University of California, San Francisco. Dr Russo Hazan died after the study was completed.

Requests for reprints should be sent to Stanton A. Glantz, PhD, Box 0124, University of California, San Francisco, CA 94143.

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part of the decade of the 1980s); we then analyzed the resulting two-way contingency tables with chi-square tests. (The unit of analysis was the tobacco event.)

## Results

The 62 films contained a total of 1505 five-minute intervals (an average of 24.3 intervals per film). Of the 1505 intervals, 36% contained some reference to tobacco; 785 tobacco-related events were recorded for analysis. Tobacco was present and used in 78% (611) of these events and implied in the remaining 22%.

There was virtually no change in the presence of tobacco over time. Of the 149 variables correlated with time, 17 showed significant changes, a number not much more than expected by chance (with  $\alpha = .05$ ).

The motivation of the smoker changed when analyzed by the 3 decades ( $P = .03$ ). Relaxation was the dominant motive (38%, 27%, and 38% in the 1960s, 1970s, and 1980s), respectively. Relaxation motivations included rites of passage (teenage party smoking), ritual (automatic) smoking, and pensive moments.

Thirty-eight percent of tobacco events involved major characters in the 1960s, in comparison with 29% in the 1970s and 26% in the 1980s ( $P = .02$ ). Over the decades, ethnicity changed ( $P < .01$ ). Fewer smoking events involved Whites (81% vs 80% vs 72%), and more involved African Americans (1% vs 4% vs 4%). Gender also changed ( $P < .01$ ). Fewer events involved males (72% vs 79% vs 65%), and more involved females (11% vs 15%). Tobacco events involving relatively young people (aged 18 to 29 years) more than doubled (21% vs 22% vs 45%), while the next older group (30 to 45 years) fell by nearly half (39% vs 33% vs 21%) ( $P < .01$ ).

Occasionally (7% of tobacco-related events), smoking was held in contempt, mostly expressed as ridicule. Talk about tobacco was generally positive and inferred pleasure in the act (3% of events over time). These patterns did not change over time.

The size of the group involved in the tobacco events changed, with less smoking in small groups (1 or 2 people) and more in larger groups (16 or more people) ( $P < .01$ ). There was a change in interaction quality ( $P < .01$ ). Congenial interactions declined, and hostile situations increased. There was a small but statistically significant change in the presence of

health messages over the decades (2% vs 1% vs 4%) ( $P = .05$ ). Business activities (36%) consistently were the most popular smoking context, while smoking alone declined significantly (13% vs 9% vs 4%) ( $P < .01$ ).

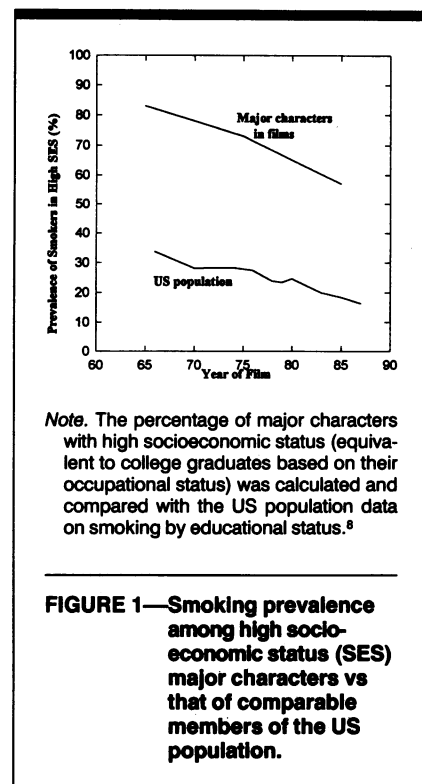
Some smoking behaviors varied over the decades. For example, the smoking level for those 46 to 60 years of age increased from the 1960s (41%) to the 1970s (45%) but decreased in the 1980s (34%) ( $P < .01$ ). This same phenomenon was true for group size "over 16" (15% vs 23% vs 12%) ( $P < .01$ ). Social contexts and motivation showed similar patterns.

Although the overall rate of smoking was stable over the 3 decades, the prevalence among major elite characters fell over time. Smoking among elites, however, remained nearly three times as prevalent as in the actual population (57% vs 19% in the 1980s) (Figure 1).

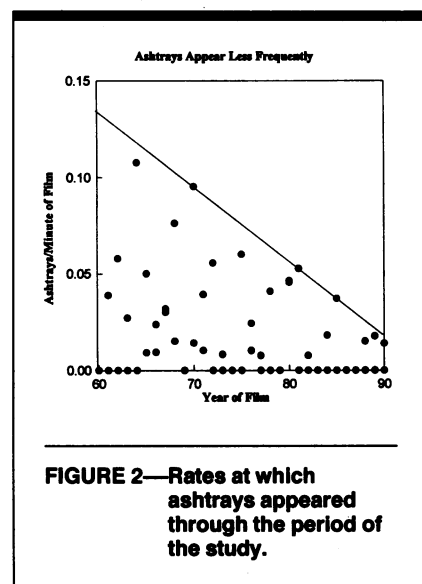
## Discussion

Films present a smoker who is typically White, male, middle class, successful, and attractive, a movie hero who takes smoking for granted. As in tobacco advertising, smoking in the movies is associated with youthful vigor, good health, good looks, and personal/professional acceptance.<sup>7</sup> There was no significant decline in overall tobacco use over the years 1960 through 1990, but changes in tobacco presentation were found. Smoking became less personal and more social, suggesting that smoking had more populist appeal. There was an increase in the amount of hostility associated with smoking, which may be attributed to the increase in violence in films and the popularity of the antihero. Smoking was used as an anxiolytic, reinforcing its "healthful" properties as a stress reducer, a finding consistent with tobacco industry efforts to promote tobacco use as an alternative intervention to improve mental health.<sup>6</sup>

To some extent, the movies included in this study reflected the reality that better educated, more affluent groups were smoking less over time. While the prevalence of smoking among major characters with high socioeconomic status has decreased, it is still almost three times as prevalent as in comparable population members and has always represented a majority behavior. Another measure of changing social expectations was that ashtrays almost disappeared from movies. The surgeon general has observed that



**FIGURE 1—Smoking prevalence among high socioeconomic status (SES) major characters vs that of comparable members of the US population.**



**FIGURE 2—Rates at which ashtrays appeared through the period of the study.**

the "ashtray is following the spittoon into oblivion."<sup>8</sup> Films have mirrored this observation. We observed a gradual, consistent decline in the presence of ashtrays (Figure 2).

Movie producers state that they lack established policies about using cigars or cigarettes in their productions other than the overall intention to stay truthful to the characters.<sup>9</sup> They may be using smoking as a means of enhancing the character of a figure, whereas previously, smoking was so prevalent that no such distinction could

be made. Nonetheless, films reinforce misleading images and overstate the normalcy of smoking, which may encourage children and teenagers, the major movie audience, to smoke. □

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## The Resurgence of Tuberculosis in New York City: A Mixed Hierarchically and Spatially Diffused Epidemic

Deborah Wallace, PhD

### Introduction

Beginning in the mid-1970s, tuberculosis in New York City edged out from under control as housing overcrowding and residential instability grew in the face of massive low-income housing destruction. This process and aspects of the epidemic that became manifest in 1979 have been described previously.<sup>1</sup>

Medical geographers have developed a taxonomy of contagious spread: hierarchical diffusion, spatial diffusion, and network diffusion.<sup>2,3</sup> Spatial diffusion is the simple geographic spread from an epicenter. Network diffusion refers to a spread via personal and business networks. Hierarchical diffusion is the hardest to understand: the spread from a major urban center where the disease has a very high incidence and prevalence to subordinate communities. The order of spread depends on both the frequency of comings and goings between the primary epicenter and the subordinate communities and the population and population densities of the subordinate communities.<sup>2,3</sup> Once established in these secondary epicenters, the disease spatially diffuses as from the primary epicenter. In this paper, the dynamics of the New York City tuberculosis resurgence are analyzed in light of hierarchical and spatial diffusion.

### Materials and Methods

All tuberculosis data were taken from the annual reports of the New York City Tuberculosis Bureau. The bureau's reported new cases and incidences (new cases per 100 000 population) were used. The denominator for calculation of incidence was the last 10-year census population. For 1978 through 1990, the 3-year running averages of the annual new tuberculosis cases were plotted against the middle year of the 3 averaged years.

The following health districts were mapped by year from 1978 through 1990: the districts representing the top quintile for incidence (new cases per 100 000 population) and all other districts with an incidence above the 1978 citywide incidence. The number of cases per square mile was calculated for the top-quintile districts by year from 1978 through 1990 by dividing the number of new cases by the district area in square miles, as provided by the New York City Department of Health.

The author is with Public Service Projects, Consumers Union, Yonkers, NY.

Requests for reprints should be sent to Deborah Wallace, PhD, Public Service Projects, Consumers Union, 101 Truman Ave, Yonkers, NY 10703.

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## ABSTRACT

For New York City from 1978 to 1990, plotting the 3-year running averages of citywide new tuberculosis cases against the middle year yielded an S-shaped curve, with the inflection point at 1983 between early slow and late rapid rise. The inflection in the S curve appears to be associated with hierarchical establishment of secondary epicenters, and the phase of rapid rise in new cases seems to be associated with spatial diffusion from both the primary and secondary epicenters. (*Am J Public Health*. 1994;84:1000-1002)