

RESEARCH PAPER

US news media coverage of tobacco control issues

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Objective: To characterise the relative amount and type of daily newspaper, local and national TV newscast, and national news magazine coverage of tobacco control issues in the United States in 2002 and 2003.

Design: Content analysis of daily newspapers, news magazines, and TV newscasts.

Subjects: Items about tobacco in daily newspapers, local and national TV newscasts, and three national news magazines in a nationally representative sample of 56 days of news stratified by day of week and season of the year, from 2002 and 2003.

Main outcome measures: Story theme, tobacco topics, sources, story prominence, story valence (orientation), and story type.

Results: Tobacco coverage was modest over the two-year period as estimated in our sample. Only 21 TV stories, 17 news magazine stories, and 335 daily newspaper stories were found during the two-year sampling period. Noteworthy results for the newspaper data set include the following: (1) government topics predominated coverage; (2) government action and negative health effects topics tended not to occur together in stories; (3) tobacco stories were fairly prominently placed in newspapers; (4) opinion news items tended to favour tobacco control policies, while news and feature stories were evenly split between positive and negative stories; and (5) tobacco coverage in the southeast, which is the country's major tobacco producing region, did not differ from the rest of the country.

Conclusion: Results suggest mixed support in news coverage for tobacco control efforts in the United States. The modest amount of news coverage of tobacco is troubling, particularly because so few news stories were found on TV, which is a more important news source for Americans than newspapers. When tobacco was covered, government themed stories, which often did not include mentions of negative health effects, were typical, suggesting that media coverage does not reinforce the reason for tobacco control efforts. However, some results were encouraging. For example, when newspapers did cover tobacco, they accorded the stories relatively high prominence, thus increasing the chance that readers would see tobacco stories when they were published.

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For more than 25 years, agenda-setting research has suggested that the amount and type of news coverage of social, political, and health issues, such as tobacco control, is a key factor in setting the agenda for policy changes.^{1–3} According to agenda-setting theory, by covering an issue, media can not only increase the relative importance of that issue, but they can also alter attitudes toward it. Furthermore, by reporting the opinions of policymakers and the public, media can help build consensus about the direction of policy development.

In the public health arena, media advocacy efforts can exert pressure on those in positions to create, change, and enforce public health policy.^{4–6} Public health advocates realise that health problems cannot be defined as problems of individual behaviour; rather, to effect change, they must be defined as public policy problems.⁵ Media coverage is one avenue by which such labelling can be accomplished.

To understand and predict the relationship between media coverage and public health tobacco control initiatives, researchers have studied media coverage of several tobacco control issues. In their analysis of the Master Settlement Agreement (MSA) debate in the *Washington Post*, Lima and Siegel found that the predominant frame for stories was the generation of new revenue.⁷ Furthermore, the researchers found none of the articles portrayed tobacco as deadly. More recently, researchers found that newspaper coverage emphasised the idea that MSA money should be used for state spending rather than for tobacco control activities.⁸ Other studies have found limited coverage for tobacco control

initiatives, such as the call from public health professionals for tobacco farmers to diversify into non-tobacco enterprises.⁹

Researchers have also studied efforts to influence media coverage of tobacco, such as the American Stop Smoking Intervention Study (ASSIST). An evaluation of the programme indicated that local newspapers in ASSIST states carried more tobacco control stories, more tobacco control policy stories, and more letters to the editor with pro-tobacco control orientation than did local newspapers from non-ASSIST states.¹⁰

Some studies have looked more generally at tobacco control coverage. A study of editorials about tobacco in US daily newspapers indicated that while editors promoted tobacco control efforts, they largely ignored key issues such as the health effects from tobacco use.¹¹ A study of major Australian newspapers found similar results; few stories covered the negative health effects of tobacco use, but opinion pieces and event coverage were predominantly pro-tobacco control.¹²

The current study contributes to the literature by including a comprehensive analysis of TV news coverage at both the local and national level. Previous studies have assessed tobacco coverage predominantly in newspapers, with a few also investigating magazine coverage. This focus is particularly troubling because more people depend on TV news for their information than on newspapers.¹³ Furthermore, the

Abbreviations: ASSIST, American Stop Smoking Intervention Study; DMA, designated market area; MSA, Master Settlement Agreement

lack of research on TV news coverage has prevented comparisons across major media types. The current study also permits comparisons across a number of important variables, such as market size, region, and media type, because it employs a nationally representative sample of news media outlets. Specifically, this study did the following: (1) characterised news coverage of tobacco, including amount, topics, sources, and valence; and (2) determined whether coverage varied by medium, market size, and region of the country.

METHOD

Sample

This study used a nationally representative sample of local nightly TV newscasts and local daily newspapers from 2002 and 2003.¹⁴ For comparison, we also sampled the three major network evening newscasts at the time of the study (ABC, CBS, and NBC) and CNN, one national newspaper (*USA Today*), and three general-readership news magazines (*Time*, *Newsweek*, *US News & World Report*).

The sample was stratified by designated market area (DMA[®]), which is the most widely used approach to defining electronic media markets.¹⁵ The DMA is a particularly useful sampling unit because it defines markets at the local level, thus providing a way for researchers to select both local TV programmes and daily newspapers from the same geographic area.¹⁴

We divided the country's 210 DMAs into six strata, with each stratum consisting of approximately one-sixth of all US households. Using six strata permitted reasonable regional representation in all strata and reasonable homogeneity of market size within each stratum.¹⁴

To avoid problems associated with using random samples of media content,^{16–18} and to avoid the unnecessary cost associated with using a census,¹⁹ we created two 28-day constructed months, one each from 2002 and 2003. To create each constructed month, we stratified our random selection by day of the week (Sunday, Monday, etc) and sampled within a given season (winter, spring, etc). We did this for each season. Therefore, the sample was balanced with respect to day of week and season of the year to better represent news coverage during each year under study.

On each day sampled, one DMA was randomly selected from each of the six strata. Then, one local nightly network affiliate newscast was randomly selected from each selected DMA such that network affiliation was balanced across all strata on a given sampling date.

To sample daily newspapers, we selected the largest newspaper in each of the randomly selected DMAs. Then the remaining newspapers in each DMA were ranked by circulation size for the day being sampled, a median split was taken, and one newspaper was randomly selected from above the median split and one from below the median split. Using this strategy, we selected 18 local daily newspapers per sampling date.

In addition to sampling local news, we obtained national news coverage. For each sampling date, national evening newscasts from the three major networks and CNN were obtained as was *USA Today*.

Three general news magazines were also sampled. We randomly chose one issue per month of each magazine, which is the optimal sample size for representation.¹⁷

Using this sampling strategy, we amassed approximately 1000 daily newspapers, 550 TV newscasts, and 72 magazine issues. Because the underlying sampling population included all of the newspaper editions and TV newscasts during the two-year timeframe, it does not matter if the same newspaper or TV station is selected more than once because we

analysed different individual newspaper editions, magazine editions, and TV broadcasts.

News story selection

We used an iterative process to train coders selecting stories that mentioned tobacco. Coders were trained to read or view the beginning of news, feature, and opinion items in the TV newscasts, newspapers, and magazines to determine whether they mentioned the growing, manufacturing, supplying, obtaining, or using of tobacco products in the beginning of the story. For print stories, coders read any story teasers, headline, subhead, and first two paragraphs of the story. For TV stories, coders watched any story teasers and the first 15 seconds of the story; if the story was introduced by an anchor and then continued by a reporter, coders watched the first 15 seconds of the anchor's introduction and the first 15 seconds of the reporter's coverage. To identify qualifying stories, coders examined newspapers and news magazines from cover to cover and broadcasts from beginning to end.

To test the reliability of the coding scheme for identifying tobacco stories, a group of trained coders coded a random selection of the three news magazines, daily newspapers and TV newscasts that represented all six DMAs, *USA Today*, and the four network evening newscasts. Because of the large number of news items that any given edition of a newspaper or news magazine prints, we randomly selected 10% of the editorial pages from each print publication in the reliability sample. For TV newscasts, coders watched the entire newscast.

Cohen's κ and Scott's π were used to assess intercoder reliability for identifying tobacco stories; intercoder reliabilities ranged from 0.90–0.96 (a range is provided because multiple pairs of coders tested coding scheme reliability). Because of the lengthy time involved in selecting stories over the two-year period, we tested twice for intercoder drift; reliabilities remained good, ranging between 0.79–0.89.

Coders identified 447 newspaper stories, 25 TV stories, and 31 magazine stories that mentioned tobacco early in the story (for example, in which it is mentioned that someone is smoking). However, for this study, we were only interested in stories in which tobacco was central to the story. Tobacco was considered central to a story when it was a story's main topic (for example, a story about the MSA), one of the main topics (for example, a story about two taxes, one of which was a cigarette tax), or central to the action of the story (a story about a house fire caused by careless smoking).

To test intercoder reliability for determining whether tobacco was central to a story, trained coders coded a random sample of stories representing all three media types. Cohen's κ was acceptable at 0.93. Coders subsequently identified 335 newspaper stories, 21 TV stories, and 17 magazine stories that had tobacco as central to the story.

Story-level coding

Using an iterative process and based in part on the coding categories used in ASSIST,¹⁰ we developed a coding scheme to capture six aspects of news coverage: story theme, presence of several tobacco-related topics, sources, valence toward government tobacco control policies/laws/regulations, story prominence, and story type. To test the reliability for these story-level variables, two trained coders coded a random selection of stories representing all three media types. Cohen's κ and Scott's π statistics for the variables ranged from 0.75–1.0, with only three variables having scores below 0.80. The remaining 373 stories were then coded for these six variables, which are defined below.

Story theme

Coders read or viewed the beginning of each story to determine which tobacco topic was emphasised the most.

We assessed story theme in this way because the beginning of a typical media story acts as a strong organising element for the story. Coders chose from among the following topics: tobacco litigation/settlement, government policy/law/regulation concerning tobacco, tobacco prevention/cessation program, negative health consequences of tobacco use, tobacco industry news, affiliated organisation/business news, or other.

Tobacco topics

Coders determined whether stories included information on the following tobacco topics: litigation/settlement, government policy/law/regulation, prevention/cessation programme, information about the business aspects of the tobacco industry, and negative health consequences.

Story type

Coders distinguished between opinion pieces (for example, editorials, letters to the editor, syndicated columns) and news or feature stories.

Sources

Given that direct quotes have been found to be more influential in perceptions of print articles than are paraphrased quotes,²⁰ we, like several other researchers,²¹⁻²⁴ limited our analysis to directly quoted sources. All directly quoted sources that referred to tobacco were coded into one of six categories: educational institutions, tobacco industry, government, advocacy/outreach groups, non-tobacco business/industry, and other. In addition, coders determined whether sources had a health/medical or research focus.

Valence of government tobacco control policy/law/regulation

For all stories that mentioned this topic at the beginning of the story (as defined previously in this article), coders determined the valence (positive, negative, or mixed orientation toward the topic) of attitudes and opinions expressed at the beginning of the story toward the government action. To be eligible for coding, attitudes and opinions had to mention the government action or in some way further the discussion of the action.

Prominence of tobacco stories

Each story was assigned a prominence score. Stories on the front page were given the highest prominence, followed by stories in the first section of the newspaper. The third level was for stories that appeared on the front page of any other section, and the fourth level was for all other stories in the newspaper. Approximately 10% of stories came from newspapers that did not have sections. These stories typically came from newspapers with small total page counts, which usually represented the smaller circulation newspapers in the sample. For stories from non-sectioned newspapers, we

assigned stories on the first page the highest prominence level. All other stories in these newspapers were assigned the second level of prominence.

RESULTS

Newspaper coverage

While only 335 tobacco stories ran in the approximately 1000 newspapers sampled over the two constructed months (an average of about one tobacco story for every three newspaper issues), some interesting patterns emerged for story theme (table 1). To determine which themes were used most frequently, we used a Bonferroni-type analysis in which we performed pairwise tests. Results show that government themes were used significantly more often than health themes, the next most used category ($z = 8.54, p < 0.05$). Likewise, health themes were used significantly more frequently than intervention programmes, the next most used category ($z = 4.60, p < 0.05$). The remaining themes were used equally. Also of note is that nearly 39% of government themed stories were about smoking bans, and nearly 23% were about economic regulations, particularly tobacco taxes.

We also investigated whether stories included some important tobacco topics. As table 2 shows, government and health topics were used most often. We also ran a series of χ^2 tests to investigate the extent to which the topics occurred together. To reduce the overall type I error rate associated with multiple statistical tests, we used a more conservative α error rate of 0.01 per test rather than the more typical 0.05. The results indicated that two pairs of topics tended to appear together in stories: litigation/settlement and intervention programme ($\chi^2 (1) = 16.99, p < 0.01$) and litigation/settlement and tobacco industry ($\chi^2 (1) = 12.13, p < 0.01$). Because many tobacco intervention programmes have been funded by settlement funds, we would expect these two topics to occur together. Likewise, given that litigation involves the tobacco industry, we would expect these two topics to occur together.

Results also indicated that two topics did not occur together in stories: tobacco industry and negative health effects ($\chi^2 (1) = 11.34, p < 0.01$); government policy/law/regulation and negative health effects ($\chi^2 (1) = 38.10, p < 0.01$). We would expect business stories about the tobacco industry to be less likely to include negative health effects of tobacco use. However, the fact that government policy/law/regulation and negative health effects topics did not occur together is troubling from a public health perspective. Much of the impetus for government action has been the negative health effects of tobacco use. By divorcing these two topics in stories, the media are not reminding readers of why government actions were taken or proposed.

Because the beginning of a news item largely sets the tone for the item, we were particularly interested in the valence at the beginning of stories and opinion pieces that mentioned government tobacco control efforts at the beginning of the

Table 1 Story theme across sample and by year

Story theme	Total percentage	2002 percentage	2003 percentage
Government	51	44	58
Health	20	27	13
Tobacco intervention programme	7	8	7
Tobacco industry	7	4	10
Litigation/settlement	6	7	6
Other	5	4	4
Affiliate organisation	4	6	2
Total	100	100	100

Table 2 Tobacco topics covered in stories

Topic	Percentage of stories
Government	64
Health	50
Litigation/settlement	21
Tobacco intervention programme	16
Tobacco industry	13

Percentages sum to more than 100 because stories can contain more than one topic.

Table 3 Valence for news items mentioning government tobacco control efforts early in the items (n = 191)

Story type	% positive valence	% negative valence	% mixed valence	% valence not present
Opinion (n = 66)	55	29	11	6
News/feature (n = 125)	16	17	13	54

story (that is, in the headline, subhead, and first two paragraphs of the story). As shown in table 3, news and feature stories were evenly split between positively and negatively valenced stories, while opinion pieces were more likely to favour government tobacco control efforts than to oppose them.

Interestingly, when tobacco stories were published, they were accorded fairly high prominence in newspapers. Nearly 62% of stories were located on the front page or in the first section of the newspaper, with 7.5% more on the front page of another section of the newspaper.

News and feature items in the sample contained few directly quoted sources of tobacco information. The number of sources for news and feature items ranged from 0–8, with a mean of 1.55 and a standard deviation 1.77. Opinion pieces contained even fewer sources, with a range of 0–7, a mean of 0.39, and a standard deviation of 1.00.

We also analysed the categories of sources used in stories. By their nature, non-opinion news items are more likely to use sources than are opinion items, so we limited this analysis to non-opinion items (n = 241). To reduce the overall type I error rate associated with multiple statistical tests, we used a more conservative α error rate of 0.01 per test rather than the more typical 0.05. Results indicate that government sources were typically used significantly more often than other categories of sources (table 4).

Because of the substantial negative health effects from tobacco use, we also investigated whether news and feature stories used health/medical or research sources. Results show that these stories used significantly more non-health/medical or research sources (mean 1.28, SD 1.66) than health/medical or research sources (mean 0.27, SD 0.64) ($t(240) = 8.83$, $p < 0.05$).

Comparison by year

Because the sample covered a two-year period, we analysed whether stories differed over time. For the vast majority of variables, we found no significant differences between stories

Table 4 Pairwise comparisons of source categories for non-opinion items (n = 241)

Comparison	Mean difference	t Value
Government v education	0.28	3.87*
Government v advocacy	0.29	4.80*
Government v tobacco industry	0.27	3.76*
Government v non-tobacco business/industry	0.17	2.26
Government v other	0.31	4.53*
Education v advocacy	0.01	0.17
Education v tobacco industry	0.01	0.23
Education v non-tobacco business/industry	0.12	1.80
Education v other	0.02	0.48
Advocacy v non-tobacco business/industry	0.12	2.12
Advocacy v other source	0.02	0.36
Advocacy v tobacco industry	0.02	0.43
Tobacco industry v non-tobacco business/industry	0.10	1.79
Tobacco industry v other	0.04	0.74
Non-tobacco business/industry v other	0.14	2.36

* $p < 0.01$; all tests $df = 240$.

published in 2002 and in 2003. However, the years did differ in some suggestive ways. Story themes differed by year ($\chi^2(6) = 19.10$, $p < 0.05$) (table 1). Using a procedure for controlling type I error rates in post-hoc χ^2 tests, we found that the only significant differences by year were for health themes ($\chi^2(1) = 10.67$) and government themes ($\chi^2(1) = 7.05$).²⁵ This result combined with our earlier result that tobacco control government actions and negative health effects topics did not occur together indicate that the trend in coverage may be a decrease in health coverage and an increase in government action coverage, although it is possible that the difference may be caused by random error in our sample. These results suggest a continuation of the phenomenon researchers found for editorials published in 2001,¹¹ suggesting these trends are substantive rather than artefactual.

Comparisons by media market size and region

Results showed few differences in coverage by media market size and region. The Kruskal-Wallis test for ordinal data revealed evidence for differences in prominence across market size ($\chi^2(5) = 14.03$, $p < 0.05$) and region ($\chi^2(3) = 10.52$, $p < 0.05$). However, there was no pattern to the distribution. The number of education sources also differed by region ($F(3) = 3.42$, $p < 0.05$); however, since the mean number of education sources per region was less than one, this difference has no practical significance.

Television coverage

Despite viewing approximately 550 TV news programmes sampled over the two years under study, we found only 21 tobacco stories, which averages to 0.38 stories per sampling day or approximately one tobacco story per 25 TV news programmes. This amount of coverage differs from that reported by Babb, Nelson, and London who found an average of 0.57 stories per day during 2004.²⁶ The discrepancy can be explained by sampling differences. Babb *et al* continuously sampled CNN, which accounts for nearly 62% of their stories; we sampled only one hour of CNN news per day.

While the small number of TV stories rules out a meaningful statistical analysis, we found trends similar to those in newspapers. Government themes were predominant (10 stories), followed by health (five stories) and litigation/settlement (four stories). To an even larger extent than for newspapers, TV carried stories about smoking bans, particularly those for New York City and New York state which went into effect in March and July 2003, respectively. As with the newspaper results, government topics and health topics appeared together quite seldom.

News magazine coverage

Similar to TV, news magazines contained little tobacco coverage. The 72 magazine issues in the sample contained only 17 tobacco stories, or approximately one tobacco story in every four magazine issues. *US News & World Report* dominated coverage, publishing 65% of the stories. Counter to what was found for TV and newspapers, health and government themes appeared the same number of times, and government topics and health topics tended to appear together in stories. The additional context that magazines appear to be providing may be a function of the longer lead times for magazine stories.

DISCUSSION

One key finding from this study is the paucity of tobacco coverage in US local and national news media as represented by our sample. We would expect tobacco coverage to be less than for many topics, such as crime, accidents, natural disasters, and elections. However, given the push by health

advocates for smoking bans, increased taxes, and increased funding for smoking prevention programmes, we would still expect to find more than one tobacco story for every 25 TV news newspaper issues or one tobacco story for every 25 TV news programmes. Because more people watch TV news than read newspapers,¹³ it is especially important for health advocates to get tobacco control messages into TV news.

One approach is to make coverage more economically attractive to TV stations. According to McManus,²⁷ stories that appeal to audiences and are inexpensive to produce are the most likely to air. The more that health advocates can frame tobacco as a health topic, which is a popular topic among media consumers, and can lower the costs of producing TV news segments, the more likely it is that tobacco stories will be shown. Providing packaged content, such as video news releases, is one way to lower production costs. Likewise, advocates could increase coverage by using TV station "news tip hotlines" to alert stations to tobacco stories in the community. Advocates could also encourage people to employ "viewer talkback" hotlines and email addresses to comment on those tobacco stories that are aired. These comments can not only encourage stations to increase coverage, but they may also extend coverage if these comments are aired as part of weekly "viewer comments" segments.

Another key finding is that newspapers and TV appear to treat government regulation of tobacco and health effects of tobacco as non-overlapping issues. In other words, journalistic practice seems to result in stories about tobacco control being framed primarily in terms of political debate rather than public health impact, perhaps because such coverage is the responsibility of political rather than health reporters. This finding reinforces the pattern found in previous research in which stories that discussed government regulation of tobacco were unlikely to cover health effects of tobacco use.⁷ By divorcing these two issues, media are emphasising tobacco control as a form of regulation without connecting it to the rationale for the control—that is, tobacco kills.

This separation may make tobacco control efforts more vulnerable because regulations that are separated from their rationale may be more easily overturned or changed. For example, when media coverage of a proposed smoking ban centres on how bars, restaurants, and casinos will lose revenue, instead of on the negative health consequences of second-hand smoke, the resulting ban may exempt these establishments.

To counter these business livelihood arguments, health advocates can also use economics; they can provide data on

What this paper adds

Previous research has focused predominantly on newspaper coverage of tobacco using relatively limited samples of newspapers, with little, if any, analysis of TV news coverage. This study, which employed a nationally representative sample of daily newspapers and local and national TV news programmes from the United States, permitted comparisons across media types, media market size, and geographic region. The study found tobacco-related coverage was a very small percentage of total coverage, particularly in TV news programmes. The study also found that the relative attention to tobacco in daily newspaper coverage did not differ substantively by media market size or geographic region. Another key finding, in line with previous, smaller studies, was that newspapers and TV news programmes tended not to mention the health effects of tobacco in stories about government regulation of tobacco.

the high cost of treating tobacco-related health problems such as cancer, coronary heart disease, and chronic obstructive pulmonary disease. Such arguments may also encourage the news media to cover tobacco control issues as public policy problems and not personal responsibility problems.⁵

An interesting result is the consistency of newspaper coverage across geographic region. We expected the south-east, a major tobacco-producing region, to have more coverage of tobacco and to downplay negative health effects relative to other regions of the country. Furthermore, we expected that southeastern newspapers would contain less positive coverage of government tobacco control efforts. None of these expectations was supported. These results are good news for tobacco control advocates.

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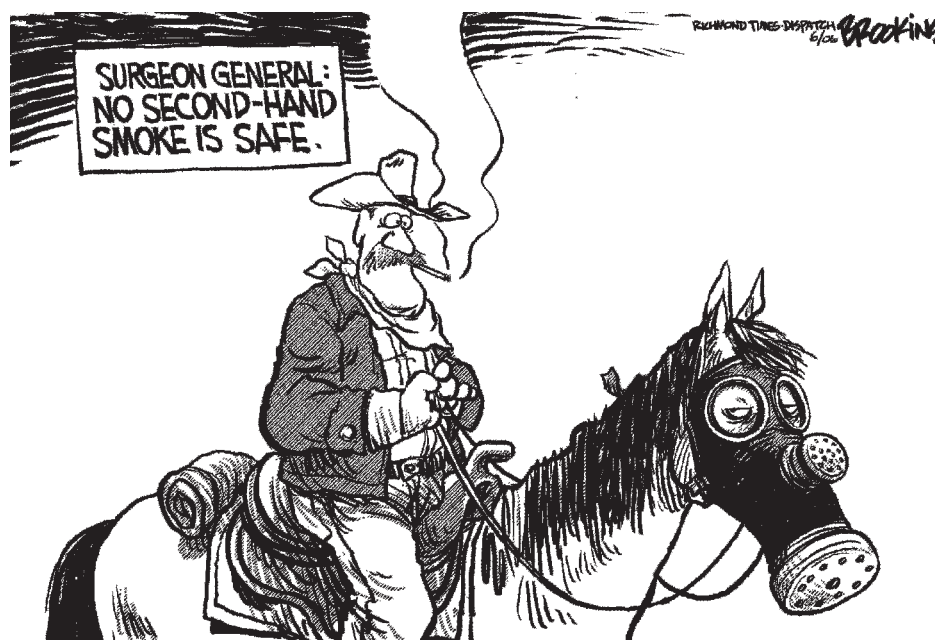
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The Lighter Side



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