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Talking about Obesity: News Framing of Who Is Responsible for Causing and Fixing the Problem

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Analyzing newspaper articles and television news, we explore how American news media have framed the issue of obesity. More specifically, we analyze the way the media present the question of who is responsible for causing and fixing the problem. Our data reveal that over the last 10 years, mentions of personal causes and solutions significantly have outnumbered societal attributions of responsibility. Recently, however, a balance was established between individualistic and societal attributions of responsibility. Mentions of societal causes and solutions have increased considerably, whereas decreasing numbers of personal solutions have appeared in the media. Findings also indicate that television news is more likely than newspapers to mention personal solutions, but less likely to attribute the responsibility to society.

Over the past several decades, the number of overweight Americans has grown substantially, and obesity is now an increasingly important health issue in the United States. According to the Centers for Disease Control and Prevention (CDC), about 65% of adults over 20 are overweight (CDC, 2005a), and the rates of obesity (body mass index [BMI] of 30 or higher) have doubled from 15% in 1980 to over 30% today (CDC, 2005b).

As obesity becomes more prevalent, there has been growing concern about the issue, producing a large amount of public and private discussions (Lawrence, 2004). At the center of these discussions is the question of who is responsible for causing and fixing the problem. How to define responsibility is important because it may shape the overall policy approach, particularly the domain of society to which change effort should be applied (Salmon, 1989).

Mass media play an important role in this process of defining a social problem. The media have the power to select certain issues for social attention and thereby set the agenda for policymakers and the general public (Cobb & Elder, 1972). News media also ''frame'' an issue in a specific way, telling the audience what is important to know about the issue (Gitlin, 1980). The media therefore tell the audience not only which issue to think about but also how to think about it (Kim, Scheufele, &

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Shanahan, 2002). In particular, news media may function to shape people's perceptions of who is responsible for a specific social problem (Iyengar, 1991).

Analyzing newspaper articles and television news, we examine how American news media have presented the question of who is responsible for causing and solving the obesity problem. We should acknowledge that there was indeed a published study on news framing of obesity (Lawrence, 2004), which already examined how the media presented the question of responsibility. Despite its pioneering contribution, the study was largely exploratory in that its analysis was based on a small number of articles ($N = 136$) from a single newspaper, *The New York Times*. Our study analyzes 300 articles sampled from six national and regional newspapers. Our analysis also includes 200 news transcripts sampled from three television networks. It is therefore our goal to offer a more comprehensive analysis of obesity coverage based on a large sample size, which would greatly enhance the external validity of the findings.

Personal and Societal Responsibility for Health

The discussion of responsibility involves two conflicting views (Wikler, 2002). One view holds that a social problem is caused mostly by deficiencies of individuals, often those who are affected by the problem. Because the problem is understood as resulting from flaws in individual behaviors, change efforts focus mostly on modifications of the problematic behaviors. According to the second view, on the other hand, a social problem results primarily from certain flaws in social and environmental conditions such as unequal distribution of economic resources, unsafe environments, or unethical business practices. Remedies to the problem require changes in government policies, in business practices, and in other larger social forces (Ryan, 1976).

A person's health status is a function of physiological, structural, and environmental factors as well as his or her own actions (Callahan, 1986). In the United States, however, the effort to enhance public health has focused more on the individualistic model, which assumes that the primary sources of health problems reside in personal behavior (Wikler, 2002). The best way to promote public health, therefore, is to prevent such unhealthy behaviors as cigarette smoking or excessive eating (Kim & Shanahan, 2003; Wallack, Dorfman, Jernigan, & Themba, 1993). Social, political, or economic factors, on the other hand, are deemed irrelevant or only secondary to individual choices and biological makeup.

This unbalanced emphasis on personal responsibility can be attributed in part to the strong individualism ingrained into American life (Wallack et al., 1993). Guttman and Ressler (2001) point out that with the large accumulation of research and epidemiological evidence linking behavioral factors to disease, many health professionals have adopted the proposition that specific individual behaviors are primary causes of preventable illness. As Salmon (1989) noted, it is also likely that societal approaches may be too drastic to consider particularly among the dominant class. Prescriptions for such "societal medicine" include, for example, making medical services more affordable, regulating relevant industries, or legislating new taxes, all of which may require a change in how the population shares in the economy (Bezruchka, 2001).

Since the early 1990s, however, there has been a considerable shift toward societal approaches in public health practice and research. In an effort to reduce youth smoking, for example, Legacy's "truth" has used campaign messages that focus on deceitful practices of the tobacco industry (Farrelly, Davis, Haviland,

Messeri, & Healton, 2005). Other antismoking initiatives, for example, the National Cancer Institute's (NCI's) ASSIST (the American Stop Smoking Intervention Study) and the Robert Wood Johnson Foundation's "Smokeless States," have incorporated environmental and policy-based strategies such as counteracting cigarette advertising, legislating smoke-free environments, raising tobacco taxes, and limiting youth's access to tobacco. Studies also have examined the effectiveness of these strategies including restaurant smoking restrictions (e.g., Albers, Siegel, Cheng, Biener, & Rigotti, 2004) and tobacco taxes (e.g., Hu, Sung, & Keeler, 1995).

When it comes to obesity, CDC's VERB campaign (www.cdc.gov/youth-campaign) can be an example of the recent shift in intervention efforts toward social environmental solutions. The campaign incorporates both personal and societal level approaches including public education, advocacy, and policy changes as a way to facilitate physical activity among children ages 9–13. Research also has identified an important role of societal factors, such as neighborhood environment and socio-economic status, in shaping dietary patterns and in facilitating physical activities (e.g., Popkin, Duffey, & Gordon-Larsen, 2005; Zhang & Wang, 2004).

News Framing of Responsibility

News media seek to reduce the complexity of issues by presenting them in easy-to-understand interpretive packages. Framing refers to the process where the media select certain aspects of reality and make them more salient, while leaving other aspects out of the package (Entman, 1993). It is in this selection process that the media promote a particular problem definition, leading the audience to make attributions of responsibility or other judgments based on different frames or interpretations offered for the same factual content (Kim et al., 2002).

News media often are criticized for reducing important health issues to small individual-level problems (Montgomery, 1990). Social responsibilities are largely ignored, whereas individual causes and solutions are repeatedly emphasized. Wallack (1990) points out that news media in general fail to question the social arrangements that contribute to health problems, ignoring such important causes of disease as poverty or unethical business practices.

There are several reasons. First, because the media simply reflect mainstream views of Americans, they generally portray society as fundamentally sound, attributing most problems to corrupt or irresponsible individuals (Wallack et al., 1993). Second, public health is inherently political, involving compromise and conciliation of volatile issues. These issues, according to Wallack (1990), affect many interests not necessarily prosocial but often represented in media advertising. Finally, news framing, television news in particular, is mostly *episodic* rather than *thematic* (Iyengar, 1991). Episodic framing involves storytelling, in which an issue is presented in a specific event or personal case. Thematic framing, on the other hand, places an issue in a larger and more abstract social context. It is in episodic presentations that the media mistake important social issues for little human-interest stories (Gitlin, 1983). Problems are seen as personal in nature and disassociated from larger social, political, and economic factors. Most causes instead are found in irresponsible or unfortunate individuals.

Who Is Responsible for Obesity?

Obesity is a complex condition with many behavioral, genetic, environmental, and psychosocial contributing factors (Ludwig & Gortmaker, 2004). Nonetheless, the

direct cause of obesity is individual behavior, involving eating too many calories and not getting enough physical activity (CDC, 2005b). Researchers also identified 10 different genes that might contribute to obesity. By regulating food intake, these genes genetically predispose some individuals to gain weight faster and store more fat (Perusse et al., 2005).

When the responsibility is assigned to individuals, solutions are to be found at a personal level too. Healthy eating habits and physical activity are often cited as individual solutions to obesity (Serdula et al., 1999). Medical treatments are also available for the obese. Surgeries establish an energy deficit by restricting caloric intake among the severely obese (Choban, Atkinson, & Moore, 1996). Weight-loss medications create an energy deficit by suppressing appetite and interfering with fat absorption (Choban et al., 1996).

Becoming obese is in general a direct outcome of individual behaviors, and it is individuals who make the decision to eat too much or to avoid physical activities. It is important to note, however, that there are many societal factors that may facilitate or contribute to making such unhealthy decisions. Obesity is a result not only of personal factors but also of environmental, cultural, and socioeconomic conditions, such as the food industry and its marketing practices, unhealthy school food, lack of physical education, accessibility and affordability of healthy food, and limited opportunities for outdoor activities (CDC, 2005b).

Societal solutions require drastic approaches in which changes are either legislated or mandated. Regulations of the food industry and its aggressive marketing can be vital to controlling obesity (Gillers, 2005). Adding taxes on unhealthy food also might be an effective way to reduce its consumption (Leigh, 2004). School reform is needed to combat obesity. Public health advocates recommend schools provide healthier cafeteria foods and incorporate more physical activity programs (CDC, 2005b). Subsidization of healthy foods and tax breaks to make exercise more affordable also can be considered to promote healthier eating and lifestyle particularly among low-income families (Guttman & Ressler, 2001).

Research Questions and Hypotheses

Our first research question and two hypotheses explore how the media frame the issue of obesity, particularly looking at whether news coverage tends to focus more on individuals than on society in discussing who is responsible:

RQ1: How have the media presented the causes and solutions for obesity? Have certain causes and solutions appeared more often than others?

H1a: News coverage of obesity will present personal causes more often than societal causes in discussing who is responsible for producing the problem.

H1b: News coverage of obesity will present personal solutions more often than societal solutions in discussing how to solve the problem.

Television is distinctively episodic in presenting social issues (Iyengar, 1991). In the episodic presentations, television necessarily displaces its attention away from larger social conditions, and instead focuses more on what happened to an individual. Although newspapers also pay significant attention to personal causes and

solutions, it is likely that the emphasis on individual reasonability would be greater in television:

H2a: Television news will focus more on personal causes than newspapers in discussing who is responsible for producing obesity.
H2b: Television news will focus more on personal solutions than newspapers in discussing how to solve the problem.

Our second research question asks how news coverage of obesity has changed. As the number of overweight or obese Americans increased dramatically, did the media begin to pay more attention to a certain type of responsibility, either personal or societal?

RQ2: How has media coverage of causal and solution responsibility changed over the years? Have mentions of certain causes and solutions increased or decreased?

Methods

Sample

Newspaper and television news data for this study came from a keyword search of the *LexisNexis* database. Using the keywords "obesity" or "obese" appearing in the headline, lead paragraphs, or index terms, we retrieved articles published in six national and regional newspapers, *The New York Times*, *The Washington Post*, *Chicago Sun-Times*, *The San Francisco Chronicle*, *The Houston Chronicle*, and *USA Today*. Using the same keywords, we also retrieved news transcripts on obesity from three television networks (*ABC, CBS, NBC*). Our analyses included news stories published or aired between January 1995 and August 2004.

Our search yielded a total of 4,552 articles and 1,476 transcripts matching the keyword either "obese" *or* "obesity." Using systematic sampling,[1] we then produced a manageable sample of 300 articles and 200 transcripts for content analysis. As our analysis proceeded, we identified a large number of items unrelated to the issue of obesity (e.g., pet obesity). Many items were also duplicates (e.g., the same article appearing in different weekly editions or a tease for later in the program). Across different years, these unrelated items and duplicates ranged from 30.6% (2003) to 51.1% (1999) of newspaper articles and 12.5% (2000) to 42.9% (2002) of news transcripts we sampled. Adjusting for these numbers, we estimate that the total amounts of obesity coverage would be about 2,751 news articles and 1,079 newscasts.

Coding

Table 1 shows the coding instrument that specifies what may constitute each potential cause or solution for obesity. Attributions of *causal* responsibility were categorized into personal and societal causes. Personal causes included individual behaviors, lifestyles, and genetic factors that might be responsible for becoming obese. These personal attributions were categorized into one of four causes: *unhealthy diet, sedentary*

[1]Sampling interval (k) was calculated by dividing the total number of news items by sample size. Every kth item then was selected into the sample.

Table 1. Attributions of causal and solution responsibility (code sheet and intercoder reliability)

Causal responsibility	Solution responsibility
Personal causes (Scott's pi = .81)	**Personal solutions (Scott's pi = .74)**
Unhealthy diet: Consuming too much food, consuming too much unhealthy food, addictive or emotional eating.	Healthy diet: Consuming less food, consuming healthy food.
Sedentary lifestyle: Lack of exercise, Lack of physical activities.	Physically activities: More exercise and physical activities.
Genetic conditions: Genetic/biological factors that may produce obesity (e.g., imbalance of hunger hormones that may stimulate appetite).	Medical treatments: Medications (e.g., diet pills), surgical treatments of obesity (e.g., gastric bypass, gastric stapling).
Others: E.g., poor adult role models.	Others: E.g., working with a support group, talking to a counselor, parents as role models.
Societal causes (Scott's pi = .86)	**Societal solutions (Scott's pi = .81)**
The food industry: Obesity-promoting foods (fast/junk food), super-sizing, large increase in fast/junk food restaurants, other aggressive marketing promotions.	Regulations of the food industry: Regulating obesity-promoting foods, super-sizing, vending machines, and other aggressive marketing promotions, taxing unhealthy food.
Schools & education: Unhealthy foods in school cafeterias, lack of physical activity programs at schools, lack of public education about healthy eating and lifestyle.	Changes in schools & education: Healthier food in school cafeteria, more physical activity programs at schools, more public education.
Socioeconomic factors: Low-income families may not be able to afford healthy food, exercise equipment, or a gym membership. They may be too busy to prepare their own healthy food.	Socioeconomic changes: Narrowing income gap, healthy food should be more affordable and available, more affordable exercise.
Others: E.g., automobile-oriented society (e.g., drive-thru stores and restaurants, big-box stores), unsafe community (crime, traffic, accident), and limited opportunities for outdoor activities.	Others: E.g., less automobile-oriented and more walking-oriented society (less drive-thru stores and restaurants, less big-box stores), safer community, and more opportunities for outdoor activities.

lifestyle, genetic conditions,[2] and *others* (see Table 1). Societal causes, on the other hand, were the social, economic, and environmental conditions that might contribute to producing obesity. These societal reasons were also categorized into four causes: *the food industry, schools and education, socioeconomic factors*, and *others*.

Attributions of *solution* responsibility also were categorized into personal and societal solutions (see Table 1). Personal solutions included four categories including *healthy diet, physical activities, medical treatments*, and *others*. Societal solutions also had four categories, *regulations of the food industry, changes in schools and education, socioeconomic changes*, and *others*, which covered a variety of regulations, policy changes, and public education that would enhance healthy eating and physical activities.

The entire text of each article and transcript was examined for the attributions of responsibility. Two coders coded the articles and transcripts after having conducted a series of training and pilot-test sessions. We calculated intercoder reliability by double coding a random subsample ($N = 75$ or 15%) of the data. Intercoder reliability corrected for agreement by chance (Scott's pi) ranged from .74 to .86 with an average reliability of .81 (see Table 1).

Two coders first examined whether each article and program mentioned any one or more of the four personal and four societal causes. Each cause was coded as "not present" (0) or "present" (1). Coders then determined how many mentions of personal and societal causes were made in each news report. Whereas some articles ($N = 33$) and programs ($N = 31$) contained no mention of either personal or societal causes, there were also many items mentioning more than one of the four personal and four societal causes. In many cases, the same cause was mentioned more than once in a single item. No matter how many mentions were made, we counted them as one mention as far as they came from the same article or program. This allowed us to avoid unnecessarily inflating the number of mentions made of a particular cause. In each news report, therefore, the total number of personal-cause and societal-cause mentions ranged from 0 to 4, respectively. Using the same method, coders also counted how many personal and societal solutions were mentioned in each news report.[3]

[2]Lumping genetic conditions into the personal-cause category may obscure the underlying moral dimension, that is a big part of public discourse. Genetic/biological causes are acquired involuntarily; thus nobody blames obese people if they have a genetic or biological reason. It might be reasonable, therefore, to have genetic factors as a separate category in addition to personal and societal causes. We should emphasize, however, that our focus is on the question of who is responsible for causing obesity, but not necessarily who is to blame. Obese people with biological reasons may not be blamed for being obese. As far as who is responsible, however, the problem is attributed not to society but to these unfortunate individuals. Despite the conceptual concern, therefore, we opted to include the genetic factors into the personal-cause category.

[3]By designating exactly four categories of causes and solutions, we might have suppressed certain causes and solutions, particularly those that belong to the "others" category. For a number of reasons, however, we wanted to maintain the same number of categories (four) for each personal and societal attribution. First, designating a smaller number of categories may mean that we have more inclusive categories and it is likely that similar causes (or solutions) are grouped into the same category. In this case, mentions of those similar causes (or solutions) in a single news item are counted as one mention because we consider them as multiple mentions of the same attribution. Having a larger number of categories, on the other hand, may indicate that we have more specified and exclusive categories. It is likely in this case that similar causes (or solutions) are separated into different categories, and mentions of those similar attributions can be counted as more than one mention. We therefore had to maintain the same number of categories in order to avoid unnecessarily over- or undercounting a particular type of attribution, either personal or societal, simply by having a larger or smaller number of categories.

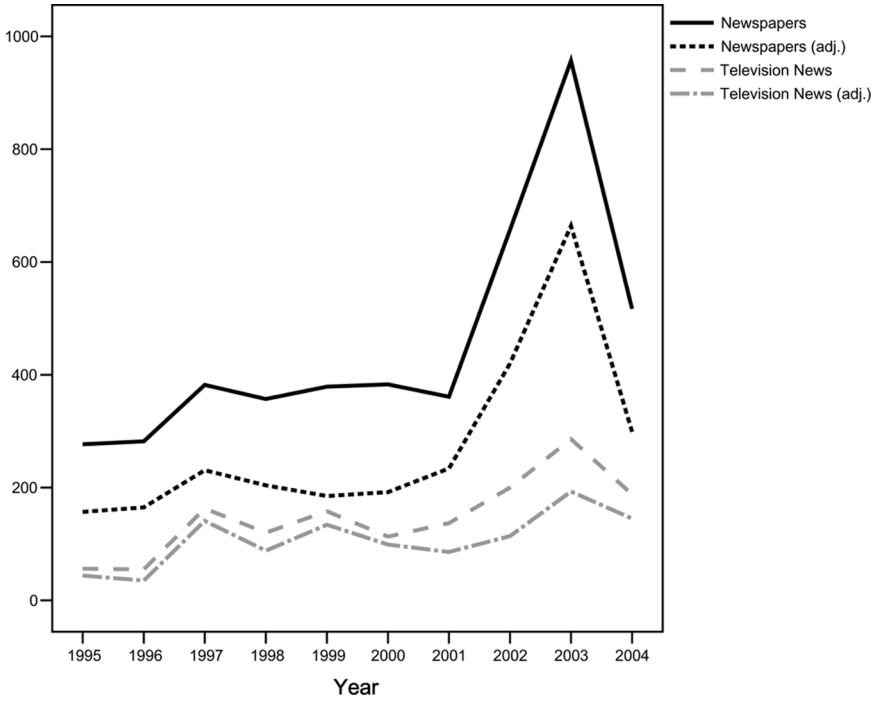

Figure 1. The amount of newspaper and TV news coverage of obesity. The amount of newspaper coverage includes articles from *The New York Times*, *The Washington Post*, *Chicago Sun-Times*, *The San Francisco Chronicle, The Houston Chronicle*, and *USA Today* matching the keywords "obesity" or "obese" appearing in the headline, lead paragraphs, or index terms. The amount of television news contains news programs from *ABC, CBS*, and *NBC* matching the same keywords. The years 1995 and 1996 contain ABC and CBS only. For both newspapers and television news, the year 2004 includes only 8 months (January–August).

Findings

Figure 1 shows the total number of news items over the last 10 years matching the keyword either "obese" or "obesity." The same figure also shows *adjusted* amounts, which are the total numbers after adjusting for estimated amounts of unrelated items (e.g., pet obesity) and duplicates.[4] The figure clearly shows a fast rise in news coverage. In 1995, there were only 277 articles (157 after adjusting for unrelated items and duplicates) published in the six newspapers. In 2003, the number increased to more than 950 (664 after adjustment). Network news coverage also shows an increase from 163 news items (141 after adjustment) aired in 1997 to more than 280 items (193 after adjustment) in 2003.[5]

[4]The total number of unrelated items and duplicates was estimated from their proportions in the articles and transcripts sampled each year.

[5]These findings are consistent with a recent estimate from the International Food Information Council Foundation (2005), which shows a rapid increase in obesity news coverage over the last several years.

Figure 1 also shows considerable increases in the years after 1996 and after 2001.[6] In 1996 the National Center for Health Statistics reported that obese or overweight people outnumbered other Americans for the first time (Lawrence, 2004). In 2001, the Surgeon General reported for the first time that obesity might soon overtake cigarette smoking as the leading cause of preventable death. Even though obesity had been an issue for a long time, it was the prestige and authority of the medical profession that defined the issue as a social problem significant enough to deserve greater attention.

RQ1 questions how news media have presented the causes and solutions for obesity. Our first two hypotheses (H1a and H1b), in particular, test whether the media have focused more on personal causes and solutions than on societal attributions. Table 2 shows that the media, both newspapers and television news, mentioned *unhealthy diet* most often as a cause of obesity (116 out of 500 articles and transcripts, or 23.3%). Following next was *sedentary lifestyle*, which has appeared in a total of 91 (18.2%) articles and newscasts. *Genetic conditions* was mentioned less often, appearing 59 (11.8%) times. The most frequently mentioned societal cause was *the food industry*, which was found in 62 (12.4%) news articles and programs. The other two societal causes, *schools and education* and *socioeconomic factors*, were mentioned far less often (21 and 17 mentions), accounting for only 4.2% and 3.4%, respectively, of the total news items.

Taken together, the four personal causes (including "others") were mentioned a total of 291 times in 500 articles and newscasts (see Table 2). That is, there have been an average of .58 personal causes in each news report. Societal causes were mentioned less often with an average of .24 appearances (a total of 119 mentions in 500 news reports). A *paired-samples* test showed that the difference was statistically significant ($t = 9.280$, $p < .001$). This finding supported H1a.

When it comes to how to solve the problem, the media again assigned solution responsibility predominantly to individuals and their behaviors (see Table 3). Three personal-level solutions, *healthy diet*, *physical activities*, and *medical treatments*, were mentioned very often, appearing 191 (38.2%), 160 (32.0%), and 153 (30.6%) times, respectively. Attributions of solution responsibility to the food industry (*regulations of the food industry*) or to schools (*changes in schools and education*) were found far less often (37 and 54 mentions), together accounting for only 18.2% of the total articles and transcripts. *Socioeconomic changes* have been mentioned only in three newspaper articles, and never appeared in television news.

When combined, references to a personal solution were made a total of 512 times with an average of 1.02 personal solutions in each news report (see Table 3). Societal attributions of solution responsibility have appeared far less often (a total of 118 mentions) with an average of .24 societal solutions per news story. This difference was statistically significant ($t = 14.756$, $p < .001$), supporting H1b.

H2a and H2b examine whether television news has presented personal responsibility more often than newspapers. As far as causal responsibility, we found no significant differences between these two forms of news media. As shown in Table 2, personal causes appeared 173 times in 300 newspaper articles, with an average of.58 mentions in each article. The same personal causes were mentioned 118 times

[6]The increase in television coverage between 1996 and 1997 is attributed in part to the fact that 1997 was the first year we included NBC into our analysis. NBC news transcripts are not fully available in the *LexisNexis* database for the years 1996 and earlier.

Table 2. Attributions of causal responsibility in news coverage of obesity

	Personal causes					Societal causes				
Media (*N*)	Unhealthy diet	Sedentary lifestyle	Genetic conditions	Others	Total	The food industry	Schools & education	Socio-economic factors	Others	Total
Newspapers										
NYT (52)	9	9	7	3	28	6	2	2	2	12
WP (52)	9	11	5	5	30	9	4	2	4	19
CST (60)	13	10	5	3	31	5	0	1	1	7
SFC (26)	8	9	2	0	19	9	2	3	2	16
HC (75)	17	13	10	4	44	9	2	4	4	19
USA Today (35)	12	3	4	2	21	2	0	0	0	2
NP Total (300)	68	55	33	17	173	40	10	12	13	75
TV News										
ABC (61)	18	14	9	0	41	6	4	0	2	12
NBC (53)	14	9	8	0	31	9	3	2	1	15
CBS (86)	16	13	9	8	46	7	4	3	3	17
TV Total (200)	48	36	26	8	118	22	11	5	6	44
Media total (500)	116	91	59	25	291	62	21	17	19	119

Note. NYT (*The New York Times*), WP (*The Washington Post*), CST (*Chicago Sun-Times*), SFC (*The San Francisco Chronicle*); HC (*The Houston Chronicle*). Entries are the number of articles or news programs mentioning each cause of obesity.

Table 3. Attributions of solution responsibility in news coverage of obesity

	Personal solutions					Societal solutions				
Media (*N*)	Healthy diet	Physical activities	Medical treatments	Others	Total	Regulations of the food industry	Changes in schools & education	Socio-economic changes	Others	Total
Newspapers										
NYT (52)	12	10	16	0	38	10	7	1	6	24
WP (52)	16	16	15	1	48	3	12	0	2	17
CST (60)	31	20	15	3	69	8	4	1	4	17
SFC (26)	7	7	6	1	21	5	5	1	5	16
HC (75)	27	23	21	0	71	3	12	0	3	18
USA Today (35)	12	7	12	1	32	1	0	0	0	1
NP Total (300)	105	83	85	6	279	30	40	3	20	93
TV news										
ABC (61)	28	28	22	0	78	3	6	0	1	10
NBC (53)	21	19	18	0	58	1	2	0	2	5
CBS (86)	37	30	28	2	97	3	6	0	1	10
TV total (200)	86	77	68	2	233	7	14	0	4	25
Media total (500)	191	160	153	8	512	37	54	3	24	118

Note. NYT (*The New York Times*), WP (*The Washington Post*), CST (*Chicago Sun-Times*), SFC (*The San Francisco Chronicle*); HC (*The Houston Chronicle*). Entries are the number of articles or news programs mentioning each solution for obesity.

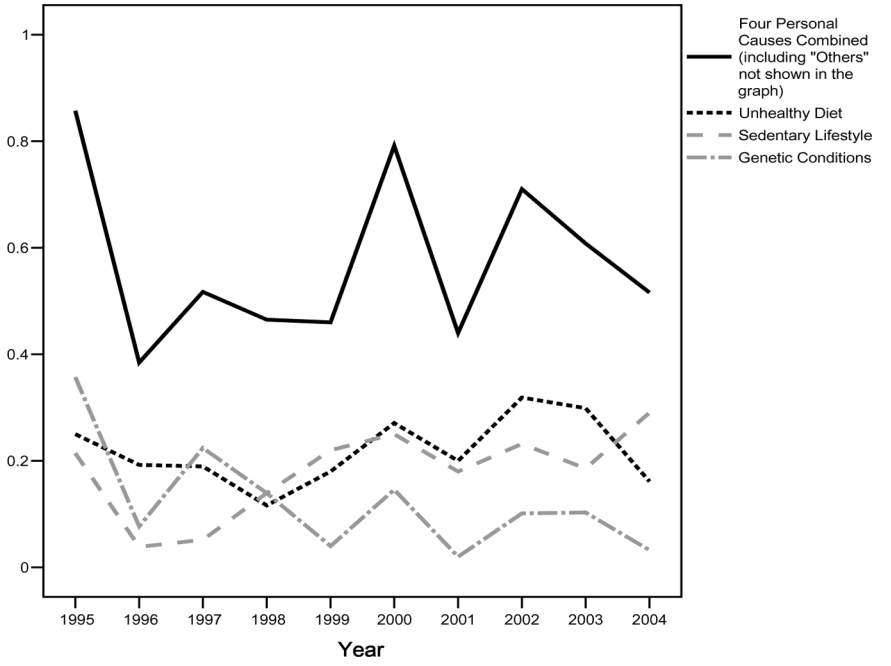

Figure 2. Mean presence of personal causes per news report (NP and TV combined). Note. Presence of each cause ranges from 0 (not present) to 1 (present). The total number of personal causes ranges from 0 to 4 in each news report.

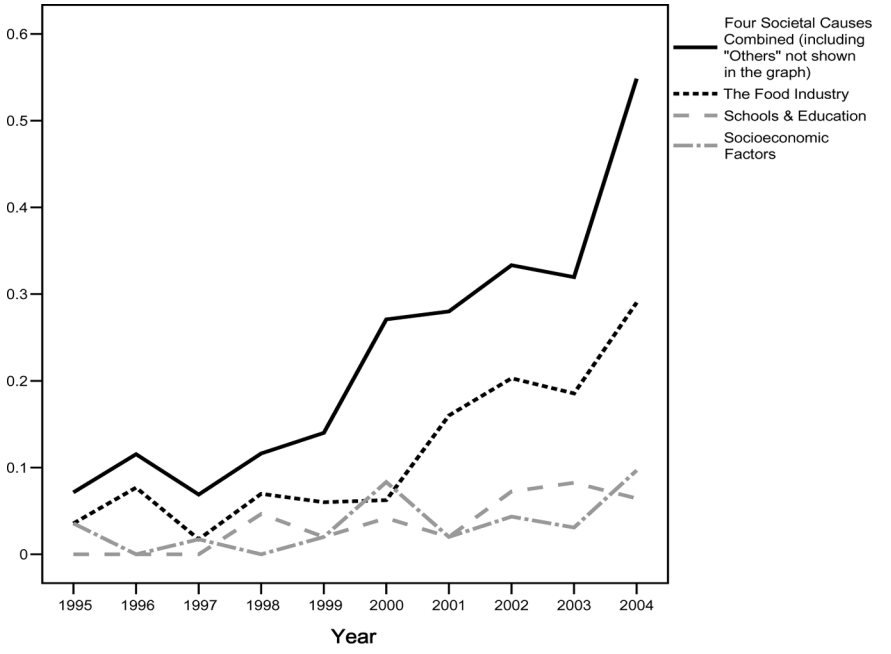

Figure 3. Mean presence of societal causes per news report (NP and TV combined). Note. Presence of each cause ranges from 0 (not present) to 1 (present). The total number of societal causes ranges from 0 to 4 in each news report.

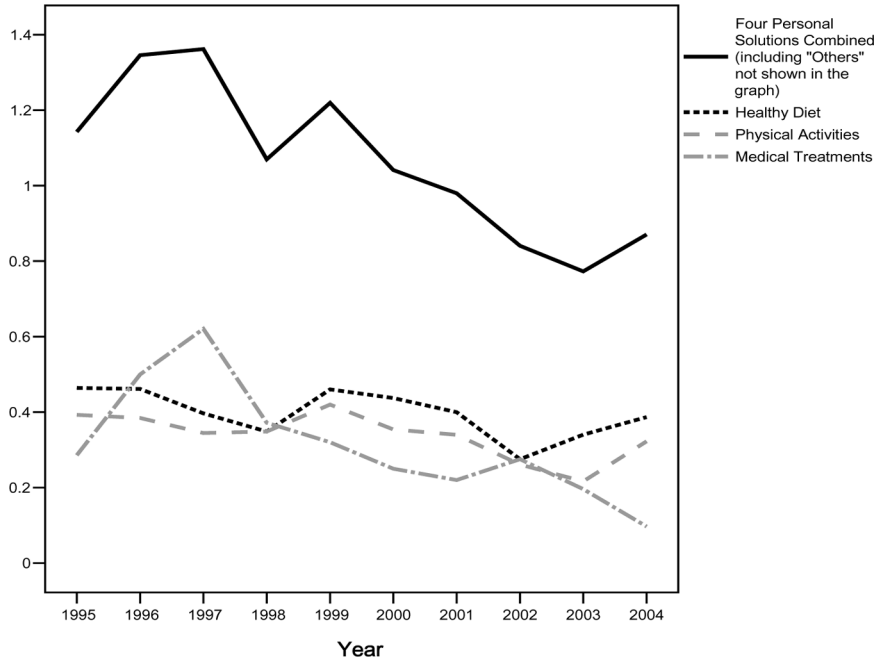

Figure 4. Mean presence of personal solutions per news report (NP and TV combined). Note. Presence of each solution ranges from 0 (not present) to 1 (present). The total number of personal solutions ranges from 0 to 4 in each news report.

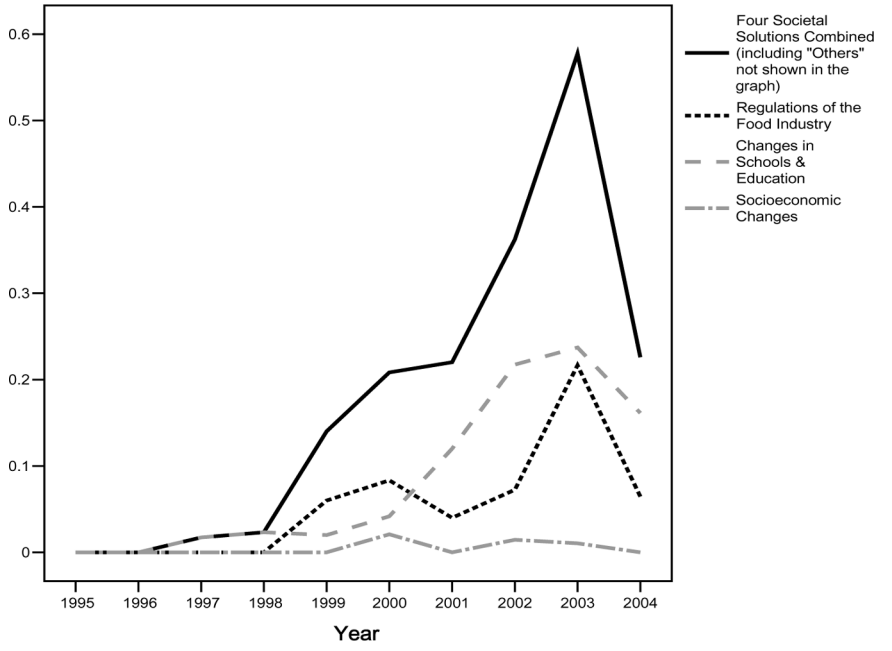

Figure 5. Mean presence of societal solutions per news report (NP and TV combined). Note. Presence of each solution ranges from 0 (not present) to 1 (present). The total number of societal solutions ranges from 0 to 4 in each news report.

in 200 television newscasts, with an average of .59 mentions. The difference was not statistically significant ($t = -.187$, $p =$ ns). Television news and newspapers also were similar in their focus on societal causes. The average numbers of societal causes were .25 in each article (75 mentions in 300 articles) and .22 in each newscast (44 mentions in 200 newscasts). The difference again was not statistically significant ($t = .606$, $p =$ ns). Our H2a was therefore not supported.

In presenting how to solve the problem, however, television did focus more on personal responsibility than newspapers. Table 3 shows that each newspaper article mentioned an average of .93 personal solutions (279 mentions in 300 articles), whereas there were 1.17 personal solutions in each newscast (233 mentions in 200 programs). This difference was statistically significant ($t = -2.748$, $p < .01$), supporting H2b. Newspapers, on the other hand, were more likely than television news to focus on societal solutions. As shown in Table 3, there were an average of .31 societal solutions mentioned in each newspaper article (93 mentions in 300 articles), whereas we found only about .13 mentions in each news program (25 mentions in 200 programs). The difference was statistically significant ($t = 3.575$, $p < .001$).

RQ2 questions how news coverage of obesity has changed over the years. Figure 2 graphs the average number of personal causes mentioned in each news report published or aired each year. As shown in the figure (see "four personal causes combined"), there were some fluctuations. Overall, however, no significant trends of increase or decrease were identified [F(linearity) $= .178$, $p =$ ns]. When it comes down to specific causes, mentions of sedentary lifestyle showed a small but statistically significant increase [F (linearity) $= 6.031$, $p < .05$]. Genetic conditions, on the other hand, indicated a decrease over the years [F (linearity) $= 13.040$, $p < .001$]. Unhealthy diet did not show any significant increase or decrease [F (linearity) $= 2.884$, $p =$ ns].

Attributions of responsibility to societal causes (see "four societal causes combined" in Figure 3) indicated a fast increase [F (linearity) $= 25.014$, $p < .001$]. Reference to the food industry, in particular, showed a considerable increase [F (linearity) $= 24.317$, $p < .001$], leading the fast rise in societal causes as a whole. Schools & education also indicated a small but statistically significant increase [F (linearity) $= 9.082$, $p < .01$]. There were no changes, however, in mentions of socioeconomic factors [F (linearity) $= 2.582$, $p =$ ns].

When it comes to how to solve the problem (see Figure 4), personal solutions as a whole indicated a considerable decrease [F (linearity) $= 19.149$, $p < .001$]. Medical treatments, in particular, showed a fast decrease [F (linearity) $= 30.184$, $p < .001$]. Physical activities also showed a small but statistically significant decrease [F (linearity) $= 5.585$, $p < .05$]. Healthy diet, however, did not show such significant decreases [F (linearity) $= 1.819$, $p =$ ns].

References to societal solutions (see Figure 5), on the other hand, showed a fast rise [F (linearity) $= 52.409$, $p < .001$]. Regulating the food industry [F (linearity) $= 25.665$, $p < .001$] and making changes in schools and education [F (linearity) $= 40.915$, $p < .001$] all indicated considerable increases, whereas mentions of socioeconomic changes have remained low and stable over the years [F (linearity) $= 1.035$, $p =$ ns].

Discussion

Analyzing newspapers and television news, we explored how the media have framed the question of who is responsible for causing and fixing obesity. As hypothesized, mentions of personal causes significantly outnumbered societal attributions of

responsibility. The media also made more references to individuals than to society in discussing solutions. This finding may not be surprising given the large prevalence of personal causes in news media in the first place. It is, however, important to note that the emphasis on personal responsibility has been much greater in presenting how to solve the problem than in discussing its causes. References to personal solutions were made a total of 512 times (see Table 3), which outnumbered societal solutions (118 mentions) by a ratio of 4.3 to 1. That is, the media made at least four mentions of personal solutions before suggesting one societal. In discussing who causes the problem (see Table 2), however, the media made 291 mentions of personal causes, which was only 2.4 times greater than the references made to societal causes (119 mentions).

Because many societal solutions can be considered too radical either politically or economically, they may be rejected in news coverage in favor of less drastic measures (Salmon, 1989).[7] In this regard, it is interesting to note that although the media mentioned the food industry quite often as a cause of obesity (62 out of 410 total mentions of causes, or 15%; see Table 2), they were less likely to suggest regulations of the industry as a solution (37 out of 630 total mentions of solutions, or 6%; see Table 3). Whereas the food industry was the most frequently mentioned societal cause, it was not the industry but schools and education that were mentioned most often as being responsible for solving the problem (see Table 3).

Our findings show that television and newspapers were not very different in their emphasis on individual responsibility. As researchers point out (e.g., Moynihan et al., 2000; Stillman, Cronin, Evans, & Ulasevich, 2001), television news may be derivative of print media. It is, however, important to report that the unbalanced emphasis on personal responsibility is greater in television. Compared with newspapers, television news was more likely to mention personal solutions, but less likely to assign the responsibility to society. For example, a considerable number of newspaper articles (30 out of 300 total, or 10%) suggested regulating the food industry, whereas television mentioned the same solution far less often (7 out of 200 total, or 3.5%). Television is a storyteller. It may be in this act of telling stories that television displaces its attention away from social conditions, and instead focuses more on individual accountability (Wallack et al., 1993). It is also likely that television news is simply less willing to attribute the responsibility to its major advertisers including the food industry.

Taken together, our findings are consistent with previous literature that has identified an unbalanced emphasis on personal responsibility in public health (e.g., Guttman & Ressler, 2001; Salmon, 1989; Wallack et al., 1993). Our study also may contribute to the theory of framing. Findings support the idea that news framing, particularly in television, tends to focus on individual behaviors and motives, rather than on broader socioeconomic or political conditions, in presenting who is responsible for causing and solving a social problem (Iyengar, 1991).

Another key finding of our study is that many causes and solutions for obesity have followed rather different trajectories over the years. Most personal causes and solutions have decreased or remained stable in the media. Mentions of medical

[7]Nonetheless, recent research indicates that the public has shown increasing support for societal solutions. Evans, Finkelstein, Kamerow, and Renaud (2005), for example, report that the large majority of their respondents favored restricting the availability of unhealthy foods in school vending machines (74%) and cafeterias (75%). Over 70% of the respondents were also in favor of small tax increase ($25) to support childhood obesity interventions. The majority (59%), however, opposed increasing costs of fast food marketed to children.

treatment, in particular, have indicated the most significant decrease. This decrease may be related to many reported problems, such as side effects of diet pills and complications after bypass surgery. Supporting this explanation, medical treatments have shown a fast decrease since 1997 when the Food and Drug Administration pulled the "fen-phen" diet drugs from the market (see Figure 4).

References to societal causes, on the other hand, have increased considerably, from less than one mention in 10 news reports in 1995 to more than 5 in 2004. Corresponding to this trend, the media also have paid increasing attention to societal solutions. Whereas there were no mentions of societal solutions in our 1995 and 1996 data, we were able to find almost 6 mentions in 10 news reports in 2003.

There may be several explanations for this growing emphasis on societal responsibilities. First, there has been increasing attention to societal approaches in recent literature and policy debates, providing journalists with a large amount of raw materials for news that involves societal causes and solutions. As Lawrence (2004) points out, many often-quoted experts in the field published a number of books, such as Nestle's *Food Politics* (2002), Brownell and Horgen's *Food Fight* (2003), Schlosser's *Fast Food Nation* (2002), emphasizing the role of social and environmental factors in explaining the fast rise in obesity. In policy debates, there has been a controversy over taxing junk food as a way to curb obesity. The so-called Twinkie tax, for example, may represent the increasing attention to societal approaches.

Lawsuits filed against fast food restaurants also contributed to the growing attention to societal factors (Lawrence, 2004). These lawsuits produced a large amount of debates in the media about whether fast food restaurants should be held responsible for making Americans obese and sick. The fast rise in childhood obesity also has produced a large amount of media publicity (International Food Information Council [IFIC] Foundation, 2005). Because children often are considered to be innocent victims of social environments (Schneider & Ingram, 1993), much debate in the media has targeted junk food marketing and unhealthy school lunches as being responsible for the problem.

Another reason may be the recent turn toward more societal approaches in health campaigns and initiatives (e.g., Legacy's "truth," NCI's ASSIST, CDC's VERB). It is likely that many health experts and journalists alike have begun to realize individual-level approaches alone cannot solve the problem. Despite all the efforts to make changes in individuals' lifestyle and eating habits, such as the fast growth in gym membership and diet programs, obesity has continued to increase at an even faster rate than before, calling for more drastic societal changes.

Our study offers an analysis of how the media frame responsibility in discussing obesity. How to define responsibility may be central to policy debates. At the same time, news framing also may influence the public's understanding of responsibility for social issues (Iyengar, 1991). Future research building on our findings needs to examine whether news framing affects the way the audience perceives who causes obesity and how to solve the problem.

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