Dispatch: 19.12.07

Journal: SOCF | CE: Blackwell No. of pages: 31 | PE: Vidyanandam

Author Received: No. of pages: 31

Sociological Forum, Vol. 23, No. 1, March 2008 (© 2008) DOI: 10.1111/j.1573-7861.2007.00046.x

Fat in the Fire? Science, the News Media, and the "Obesity Epidemic" ¹

Abigail C. Saguy² and Rene Almeling

In recent years, the "obesity epidemic" has emerged as a putative public health crisis. This article examines the interconnected role of medical science and news reporting in shaping the way obesity is framed as a social problem. Drawing on a sample of scientific publications on weight and health, and press releases and news reporting on these publications, we compare and contrast social problem frames in medical science and news reporting. We find substantial overlap in science and news reporting, but the news media do dramatize more than the studies on which they are reporting and are more likely than the original science to highlight individual blame for weight. This is partly due to the news media's tendency to report more heavily on the most alarmist and individual-blaming scientific studies. We find some

¹ This research is part of a larger project funded by a postdoctoral fellowship from the Robert Wood Johnson Foundation Program in Health Policy Research, the Fund for the Advancement of the Discipline (run jointly by American Sociological Association and the National Science Foundation), the UCLA Sociology Department, the Center for American Politics and Public Policy at UCLA, the UCLA Senate, and by the UCLA Graduate Summer Research Mentorship Program in the Humanities and Social Sciences. Jeanine Yang, Shanna Gong, Isabelle Huguet Lee, and Jen Marony provided research assistance. Rod Benson, Steve Clayman, Nina Eliasoph, Steve Epstein, John Evans, Michael Hout, Paul Lichterman, Deana Rohlinger, Gabriel Rossman, Bill Roy, Mark Schlesinger, Michael Schudson, Ann Swidler, and Stefan Timmermans provided insightful feedback on previous versions of this article. We further benefited from presenting this article at the UCLA Sociology of Medicine and Health (SOMAH) working group, the UC Berkeley Sociology Departmental Colloquium Series, and the UC Santa Barbara Sociology Departmental Colloquium Series. The ideas put forth in this article were nurtured in conversations with Nicki Beisel, Paul Campos, Marion Fourcade-Gourinchas, Barry Glassner, Darnell Hunt, Eric Oliver, Kevin Riley, Barbara Katz Rothman, Dotan Saguy, Charles W. Smith, Megan Sweeney, and Marilyn Wann. Thanks to the showmethedata listsery for stimulating discussions of obesity research. Thanks to the Statistical Consulting Group at UCLA Academic Technology Services for technical advice. Finally, we are grateful for especially insightful comments we received from an anonymous reviewer at Sociological Forum.

²Department of Sociology, University of California, 264 Haines Hall, 375 Portola Plaza, Los Angeles, California 90095-1551; e-mail: saguy@soc.ucla.edu.

evidence that press releases also shape which articles receive media coverage and how they are framed.

KEY WORDS: framing; media; news reporting; obesity; science reporting; social problems.

INTRODUCTION

4

14

34

Obesity is the "terror within," according to Surgeon General Richard Carmona, who says that "unless we do something about it, the magnitude of the dilemma will dwarf 9-11 or any other terrorist attempt" (Associated Press, 2006). This statement reflects two decades of increasingly intense concern that the United States is eating itself to death. News reports typically evoke an impending disaster, as in a recent news title that blasts "Bigger Waistlines, Shorter Lifespans: Obesity a 'Threatening Storm" (Semuels, 2005). And politicians are reacting with legislation, including "BMI report cards," the removal of soft drinks from schools, banning artificial trans fats in restaurant cooking, and requiring fast-food outlets to prominently display the caloric content of each menu item (Chute, 2006; Kantor, 2007; Leuck and Severson, 2006). The alarm over body weight is based on current definitions in which anyone with a body mass index (BMI) (weight in kilos divided by height in meters squared) over 25 is deemed "overweight" and anyone with a BMI over 30 is labeled "obese." By these definitions, an average height woman (5'4") is "overweight" at 146 pounds and "obese" at 175 pounds, while a man of average height (5'9") is "overweight" at 170 pounds and "obese" at 203 pounds. Over one-half of the U.S. population in the 1960s and almost two-thirds of the U.S. population today weigh "too much" by these standards (Flegal et al., 2002, 2005; Kuczmarski et al., 1994).

Recently, several researchers have argued that weight should be less of a public health priority (see Campos, 2004; Campos et al., 2006; Ernsberger and Haskew, 1987; Gaesser, 1996; Oliver, 2005). A 2005 study by scientists at the Centers for Disease Control and Prevention (CDC) suggested that it is only after BMI reaches 35 that there is a meaningful increase in mortality, and that people in the "overweight" category (BMI between 25 and 30) actually have the lowest rate of mortality (Flegal et al., 2005). This article does not seek to intervene in these debates. Rather, in the tradition of the sociology of social problems (Spector and Kitsuse, 1977), we aim to shed light on how "overweight" and "obesity" are being defined by claimsmakers as social problems. Other work in this tradition has examined how weight has been framed by medical professionals, researchers, fat acceptance activists, the CDC, and a food industry

lobby called the Center for Consumer Freedom (CCF) (Kwan, 2007; Saguy and Riley, 2005; Sobal, 1995). This article builds on that work by examining the claims-making activities of scientific research and the news media, as well as interactions between them.

The cultural authority of the scientific enterprise is based on its stance of objectivity and rationality, but as patients become more likely to seek medical information directly (Schlesinger, 2002), they are more likely to get their information from news sources than from scientific studies (Carlsson, 2000; Nelkin, 1987). Given this, it is increasingly important to understand how the mass media "filter and translate scientific information" (Epstein, 1996:22). In addition to information, the news media convey social norms and hierarchies, making them an important research site for cultural sociologists. Body weight and eating have traditionally been subject to moral connotations as indicators of sloth and gluttony (see Lyman, 1989). An additional layer of morality has been added to body weight and eating as controlled appetite and trim bodies have come to represent healthy living in a society where the pursuit of health is a moral end in itself (Crawford, 1980).

This article also speaks to the long-standing interest among feminist scholars in the pressures on women to conform to narrowly defined and unrealistic body expectations (Bordo, 1993; Wolf, 1991). Feminists have criticized the fashion industry for promoting images of ultra-thin female bodies, which encourage women to lose weight (Bordo, 1993; Chernin, 1995; Media Education Foundation, 1999; Thompson, 1994; Wolf, 1991) and purchase products or undergo regiments that promise weight loss, even when they prove ineffective (Bish *et al.*, 2005; Fraser, 1998; Santry *et al.*, 2005). Fat acceptance activists have written about fat women's experience of fat-hatred in contemporary societies (Cooper, 1998; Schoenfielder and Wieser, 1983; Wann, 1999; see also Millman, 1980). Our study extends this work by examining the role of medical expertise and medical reporting in shaping normative understandings of body weight.

Intersecting with these gendered discourses about body weight are racial and class inequalities. Middle-class white girls have been more vulnerable to feeling that they could never be "thin enough" (Hesse-Biber, 1996) and to the eating disorders and negative body image that ensue from that sentiment. In contrast, African-American girls seemed relatively better off, with positive self-image—even at higher weights—a product of affirming messages prevalent in African-American communities about individual style and respect for one's body (Nichter, 2000). However, increasing public health attention to "epidemic rates of obesity" among African Americans, as well as among Mexican Americans and the poor

(Flegal *et al.*, 2002), means that positive body-image at higher weights among women and girls in these groups is being increasingly portrayed as socially irresponsible and unhealthy.

Recent studies have begun to explore media reporting on obesity (Boero, 2007; Lawrence, 2003), but ours is the first to systematically examine the intersection of scientific reporting and news reporting. As is shown in Fig. 1, news reporting on obesity initially followed in the wake of scientific production, making it plausible that, in this case, the drama one reads in the news is science driven. Indeed, the news media have been shown to often uncritically reproduce the claims of scientists (Nelkin, 1987). In other cases, however, the news media debunk false perceptions or bad research through investigative journalism (Nelkin, 1987). Yet, despite a few important studies in this area (e.g., Conrad and Markens, 2001; Nelkin, 1987), we still know very little about how scientific research shapes news media reporting.

Drawing on a sample of scientific studies, press releases on those studies, and news reports on those same studies, we compare how the medical implications of body weight are framed differently across these three kinds of texts. We ask what role the news media, compared to

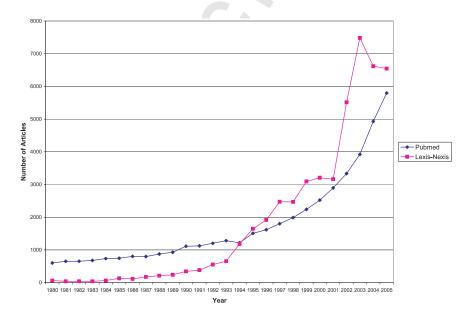


Fig 1. Science and news reporting on obesity.

Note: Searches: (1) "obesity" in the title/abstract in Pubmed; (2) "obesity" in the heading or lead paragraphs in LexisNexis U.S. News Sources.

42

scientific publications, play in framing obesity as a public health crisis. Do journalists sensationalize work on which they are reporting? Do they color morally neutral scientific accounts with moral overtones or, alternatively, are they merely reflecting the moral condemnations of fatness in the original studies? What themes, metaphors, or language, if any, are journalists and editors introducing that are absent from the original studies on which they are reporting? What role do press releases play in translating science into news? The analysis contributes to understanding how overweight and obesity are being constructed as medical and public health problems and, more generally, how science informs news reporting on health risks and health crises.

FRAMING BODY WEIGHT

By framing, we mean the selection and emphasis of "some aspects of a perceived reality ... in such a way as to promote a particular problem definition" (Entman, 1993:52). The terms "overweight" and "obesity" are themselves powerful and contested frames for understanding higher body weight as either a risk factor for disease or a disease in itself. Body weight is thus "medicalized" (Conrad and Schneider, 1992), rather than being treated as a political or civil rights issue, as other claimsmakers argue it should be (Cooper, 1998; LeBesco, 2004; Saguy and Riley, 2005; Sobal, 1995; Wann, 1999). Fat acceptance activists reject the terms "overweight" and "obesity" because they reject the medical framing of higher body weights. Instead, they reclaim the term "fat" to speak of larger bodies as part of a natural and desirable form of diversity (Saguy and Riley, 2005).

Research on framing shows that different media frames imply not only different ways of understanding social problems but also different courses of action (Gamson, 1992; Snow and Benford, 1988; Tarrow, 1992). If fatness is framed as a natural and desirable form of biological diversity, this suggests that we should promote greater social tolerance. If, on the other hand, fatness is framed as the product of unhealthy choices, fat people (and ethnic groups with higher population weights) are likely to be cast as morally deviant or even "villains" (Gusfield, 1981). Influential epidemiological studies have framed obesity as a "preventable" cause of illness, much like smoking (Mokdad *et al.*, 2004), and leading obesity researchers also tend to rely on a "risky behavior" framing of fatness (Saguy and Riley, 2005). When speaking of childhood obesity, parents may be blamed for their children's weight. One recent news article exemplifies this possibility, arguing that "parents who do nothing to prevent obesity in their children are guilty of abuse, if not legally then morally" (Lovric, 2005).

Various claimsmakers have framed "obesity" as a dire public health threat or "epidemic" in order to promote investment of public funds into research and treatment or to relax safeguards against the risks of weight-loss treatments, drugs, or surgery (Oliver, 2005; Saguy and Riley, 2005).

4

14

34

42.

Some argue that medicalizing body weight lessens the moral blame associated with fatness (Sobal, 1995; see also Conrad and Schneider, 1992). However, while framing obesity as a disease outside of individual control might remove blame, it reinforces the *stigma* (Goffman, 1963) associated with fatness in that it relies on an understanding of fatness as diseased (Saguy and Riley, 2005). An alternative framing of this issue blames the food industry or car culture for contributing to an "obesogenic" environment (see Brownell and Horgen, 2003; Dalton, 2004; Linn, 2004; Nestle, 2002; Tartamella *et al.*, 2005). Some have argued that this environmental frame lessens individual blame (Lawrence, 2003). We consider this an empirical question, but we are skeptical because, as Sylvia Noble Tesh (1988:56) has commented: "[When an environmental theory of disease causality] refers mostly to smoking, eating and other forms of behavior, then the responsibility for disease [remains] largely personal."

SCIENCE AND NEWS REPORTING: DRAMATIZING AND MORALIZING

There are institutionalized mechanisms that may lead both scientists and journalists to dramatize. Scientists may use drama to attract public attention. As others have argued:

Few scientific studies accompany their cassandras with a sense of perspective—a gentle reminder that there is a difference between statistical and personal risk ... Perhaps we do this because the language of crisis and imminent doom seem in a mass society to be the only way to get anyone's attention (Edgley and Brissett, 1990:268)

Epidemiology, the branch of medicine that studies the causes, distribution, and control of disease in populations, takes the individual as the unit of analysis, favoring a focus on individual behavior as the cause and solution for illness. Medical sociologists have observed how "healthism situates the problem of health and disease at the level of the individual with solutions formulated at that level as well" (Edgley and Brissett, 1990:159), thus diverting attention away from pressing social issues by preoccupying each person with his own individual well-being (Stein, 1982:641; cited in Edgley and Brissett, 1990:159).

On the other hand, healthism can also be used to justify intervening in the health behaviors of others.

[T]he idea that most anyone *can* be healthy given the proper combination of diet, exercise and life-style, has been translated into an ethic that everyone *should* be. The belief that health is both an individual responsibility and a moral obligation has become a justification for meddling into the lives of those persons who seem either ignorant of that "fact" or unable or unwilling to act on it. (Edgley and Brissett, 1990:259)

In other words, scientific research seems prone to the dramatization of health risks and to focusing on individual causes and solutions to disease, but it may also contribute to discourses about the need for public intervention to help people who refuse or are incapable of pursuing health.

At the same time, there are several mechanisms that lead the news media, in general, and science reporting, in particular, to dramatize, including commercial pressures (Bennett, 1983) and the tendency for claimsmakers to exaggerate urgency in the early stages of social problem formation when the competition for scarce public attention is fierce (Downs, 1972; see also Glassner, 2000). When reporting on science, journalists have been shown to favor imagery over content, cover research as a series of dramatic events, and report on provocative theory as if it were fact (Gieryn and Figert, 1990; Nelkin, 1987:30). In that the view of the United States as being in the grips of a dangerous "obesity epidemic" is currently conventional wisdom embraced by authoritative agencies like the CDC and World Health Organization (WHO), this further makes alarmist reporting on weight and health likely. The common use by journalists of metaphors like "epidemic" or "war" to attract attention to social problems (see Calasanti and Slevin, 2001:55; Clarke and Everest, 2006; Darnton, 1975) would further contribute to alarmist reporting.

Media routines rely more on individualized, rather than sociostructural, frames. News tends to be "people-centered," where "clearly identified individuals personify or stand in for larger, more difficult to grasp social forces," and "news tends to simplify complex social processes in ways that emphasize melodrama, that turn a complex set of phenomenon into a morality tale" (Schudson, 2003:48). This means that the news media tend to blame social problems on individuals rather than on systemic forces. Previous work has shown this to be true in the framing of obesity, although in recent years, the press seems more likely to also blame the food industry for increasing population weights (Lawrence, 2003).

So there are reasons to expect both science and the news to tend toward alarmism and focus on individual blame in general, but especially when discussing a highly moralized issue like weight and eating. We are also interested in how science and the news media inform each other. In that most contemporary U.S. journalists lack the time to do investigative

and critical reporting, news sources will exert a great deal of influence (Ericson *et al.*, 1989; Gans, 1979; Schudson, 2003; Tuchman, 1978). Science reporting is expected to be especially uncritical and reliant on scientists due to reverence for science, complexity of materials, and lack of scientific training (Nelkin, 1987).

This literature informs our four central questions: (1) Do the news media dramatize more than the scientific studies on which they are reporting? (2) Do the news media discuss individual responsibility for weight more than the science on which they are reporting? (3) If either (1) or (2) is true, to what extent is this due to selective attention on the part of the news, for example, to articles that lend themselves to drama or to a focus on individual blame? (4) What role do press releases play in determining which scientific articles receive media attention and how they are framed? By answering these questions, we shed light not only on the respective roles played by news and science in constructing "obesity" as a social problem but more generally on the mechanisms through which the news media disseminate medical science.

DATA AND METHODS

4

14

34

42.

To address these questions, we draw on a sample of scientific articles (N=20) from two publications of the Journal of the American Medical Association (JAMA), one of the two leading peer-reviewed medical journals. Our sample also includes relevant press releases (N=8) and news reporting on those articles (N=128). We analyzed and coded all the research articles, preliminary communications, and editorials in the 1999 and 2003 special issues on obesity in the JAMA. JAMA special issues are newsworthy events in themselves that generate media attention. Comparing coverage of articles within a special issue has the methodological advantage of allowing us to hold constant other factors that affect media coverage, such as the moment in the news cycle and the prestige of the journal. Analyzing two different issues, published four years apart, allows us to examine the effect of differences in news events (in this case the publication of each special issue) on news reporting.

The 1999 special issue included several articles that spoke to the urgency of the "obesity problem." The article that received by far the most media attention (Mokdad *et al.*, 1999) reported that the prevalence of people with a BMI over 30 had dramatically increased between 1991 and 1998, labeling it an "epidemic." The study that received the second greatest amount of media attention (Allison *et al.*, 1999) estimated

that 280,000 to 325,000 people died in 1991 alone due to obesity.³ An editorial sounded the alarm on increasing rates of obesity and called for policy intervention (Koplan and Dietz, 1999). Other more technical studies received less coverage. These included a study of the (limited) effectiveness of leptin treatment for weight loss (Heymsfield *et al.*, 1999); a research article that examined the effect of cardiorespiratory fitness on cardiovascular disease (CVD) and all-cause mortality (Wei *et al.*, 1999); a report on the association of fiber consumption with insulin levels, weight gain, and other CVD risk factors (Ludwig *et al.*, 1999); a report on the effects of intermittent exercise on weight loss, adherence, and fitness (Jakicic *et al.*, 1999); a study of the effects of reducing television, videotape, and video game use on adiposity, physical activity, and dietary intake (Robinson, 1999); and a report on the contribution of overweight and obesity to chronic health conditions (Must *et al.*, 1999).

Rather that demonstrating that obesity and overweight were major public health crises, articles in the 2003 issue tended to take this for granted. These included a report on the efficacy of low-carbohydrate diets (Bravata et al., 2003); an article on the quality of life (QOL) of children with an average BMI of 34.7 (Schwimmer et al., 2003); a study of the efficacy of self-help weight-loss programs compared to a structured commercial program (Heshka et al., 2003); the efficacy of the weight-loss drugs zonisamide in adults (Gadde et al., 2003) and sibutramine in adolescents (Berkowitz et al., 2003); and a study of the relationship between sedentary behaviors and obesity and Type II diabetes in women (Hu et al., 2003). One editorial (Bray, 2003) reviewed available weight-loss techniques and called for more research of the "obesity epidemic," while another editorial decried increasing rates of pediatric and adolescent obesity and called for behavioral modification, research into pharmacotherapy and surgery, and prevention. A report on the effect of lifestyle changes on systemic vascular inflammation and insulin resistance (Esposito et al., 2003) receeived relatively little media coverage, while a very technical study of the safety and efficacy of injections of Recombinant Variant of Ciliary Neurotrophic Factor (rhvCNTF) for weight loss (Ettinger et al., 2003) received no news coverage at all.

³ For people 18 years or older, Allison et al. compared the relative risk of mortality for those with a BMI over 30 to those with a BMI between 23 and 25 (the upper range of the "normal weight" category), assuming that all excess deaths in the first category were attributable to an individual's weight. A more recent study by CDC researchers estimated the number of excess deaths among those with a BMI greater than 30 (compared to those in the full "normal weight" category of 18.5–25) to be about 112,000. Using the same methodology, they found "overweight" (BMI 25–30) saves almost 90,000 lives each year and underweight costs about 30,000 (Flegal et al., 2005).

Using the search criteria "obesity" in the full text OR "weight" in the full text AND "American Medical Association" in the full text for three months after the publication of each JAMA issue, we collected all media reports on either of these special issues from most of the LexisNexis categories. These included General News, World News, News Wires, Business News, Legal News, University News, and Medical News. We excluded articles shorter than 500 words since shorter articles lack the space to develop themes for which we test. We also excluded peerreviewed journal articles, as we wanted news reporting on these two issues, rather than scientific articles that cited them. This generated a news sample of 128 news articles, including 69 on the 1999 issue and 59 on the 2003 issue. The sample is heavily weighted towards the General News category (N = 66), followed by the News Wire category, which includes several smaller publications (N = 24), and Business News (N = 21). Relatively few articles fell into the World News (N = 8), Medical News (N = 5), and University News (N = 4) categories. The sample is thus mostly U.S., with a few Canadian and one European (M2 Press Wire) news articles.4

We used the Google logarithmic search engine to locate press releases on any of the JAMA articles on the World Wide Web. We used various combinations of the article title and author, along with the year of publication and the word "embargoed" in our searches. This enabled us to find eight press releases, several of which referenced more than one article. Among these was an official JAMA press release for each issue and two National Institutes of Health (NIH) press releases for research they funded, as well as press releases issued by the lead author's academic institution. Since press releases are generally posted on the web and made as accessible as possible, we are confident in this method. However, it is possible that we missed one or more press releases in our search.

Coding

42.

4

Coding was done at the article level for more than 200 codes for all the scientific articles, the article abstracts, the press releases, and the news media sample. Tests of intercoder reliability averaged 90%. Below, we describe the codes used in the current analysis. Unless explicitly stated below, variables were coded as "1" when the aspect in question was mentioned by the journalist or a news source and as "0" if it was not

⁴ Tables showing the number of news articles per scientific article and providing the numbers of news articles published in each of the news categories, as well as in specific newspapers, are available on request.

41

42.

mentioned. Thus all codes are independent of each other and articles could be coded "1" on multiple codes.

To measure dramatization, stories were coded for whether the article suggested that obesity/overweight was a public crisis, represented an epidemic, or used war metaphors (e.g., "battle of the bulge" or "time bomb"). We also coded articles for whether they blurred the lines between different weight categories. A common example of this was an article that discussed people with BMI over 40 as representative of the larger problem of "overweight," when, in fact, only 2% of the U.S. population has a BMI over 40 (for a man of average height this translates into a weight of over 271 pounds). By using extreme examples in this way, these articles give an exaggerated impression of population weight.

An important way to temper or qualify alarmist reporting is to air scientific debates over risk. In the area of obesity, there is debate over whether obesity *per se* is a serious health problem or whether current weight guidelines are appropriate (Andres *et al.*, 1985; Campos, 2004; Campos *et al.*, 2006; Ernsberger and Haskew, 1987; Flegal *et al.*, 2005; Gaesser, 1996; see Saguy and Riley, 2005 for an analysis of these debates). A large body of research also documents that people who are physically fit, as measured by a treadmill test, have excellent health profiles, even if they fall into the overweight or obese categories (Blair *et al.*, 1995, 1996; Blair and Church, 2004; Katzmarzyk *et al.*, 2005; Wei *et al.*, 1999). We coded media reports for whether they invoke one of three debates or controversies in the literature, including the extent of the health risks associated with obesity, what are appropriate cut-off marks for obesity, or whether one can be "fat and fit."

To evaluate how scientific and news reports assign blame, we coded articles for whether they discussed arguments that obesity is caused by bad individual choices, including those related to diet and exercise; social-structural factors, such as restaurant portions and food advertising; or genetic factors. We also coded for suggested solutions to overweight and obesity, including individual changes to exercise or diet, policy changes, weight-loss drugs, and weight-loss surgery. We coded articles for whether they mentioned specific demographic groups, including children, the poor, African Americans, or Latinos.

FINDINGS: NEWS REPORTING ON OBESITY SCIENCE

Our analyses suggest that the news media take their cue from scientific studies when it comes to representing obesity as a crisis, but that they also throw "fat on the fire" by using—more than the scientific studies on

42.

which they report—evocative words like "epidemic" or "war." By referring to extreme examples as illustrative of the larger category of "overweight" or "obese," the news media magnify the perceived extent and scope of the "obesity epidemic." The news media are more likely than science to ascribe individual blame for weight. Our matched sample allows us to show that these patterns are partly due to the reporters' selective attention to studies that lend themselves most readily to dramatization and a focus on individual blame. Press releases help explain both which articles the press report on and how those studies are framed.

Dramatization

Table I gives the proportion of scientific and news articles dramatizing obesity in various ways. The 1999 JAMA issue and news reporting on that issue overwhelmingly represented overweight and obesity as a crisis, at 70% and 72%, respectively. This framing was less prevalent in the 2003 special issue and news reporting on that issue, at 40% and 34%, respectively. This does not mean that the 2003 articles tended to counter claims that obesity was a crisis; rather, compared to 1999, they were more likely to take them for granted. In both years, the science and news were equally likely to present obesity as a crisis. For instance, a 2003 news report proclaimed that "unless something is done to halt the trend, today's kids will grow up to be even heavier than their parents, already the fattest generation in history" (Ritter, 2003). Another 2003 news article quoted an Associate Professor of Pediatrics at the Medical College of Wisconsin saying:

Table I. Proportion of Scientific Studies or News Reports Evoking Specific Frames

	1999 Science	1999 News	2003 Science	2003 News
Drama				
Crisis	0.70	0.72	0.40	0.34
Epidemic	0.20	0.49	0.20	0.31
Ŵar	0.00	0.46	0.00	0.27
Blurring weight categories	0.20	0.39	0.10	0.53
Causes				
Individual	0.40	0.72	0.40	0.98
Systemic	0.30	0.58	0.30	0.12
Genetic	0.1	0.1	0.2	0.03
Solutions				
Individual	0.80	0.74	0.90	0.81
Policy	0.50	0.35	0.20	0.17
Drugs	0.20	0.3	0.60	0.25
Surgery	0.00	0.01	0.20	0.08

8

14

34

"This is getting so bad that it's going to exhaust all the resources we have in health care" (Fauber and Johnson, 2003a).

In both years, our news sample was more likely than our science sample to label obesity an epidemic. Twenty percent of the articles in the 1999 special issue of *JAMA*, compared to 49% of news reporting on that issue, labeled obesity an epidemic. Among the scientific articles invoking an "obesity epidemic" was Mokdad and colleagues' (1999) "The Spread of the Obesity Epidemic in the United States, 1991–1998" and an editorial commenting on this same study (Koplan and Dietz, 1999). A news article reporting on the study quoted the CDC director saying that excess weight is increasing as rapidly as an infectious disease might spread, and it should be treated as seriously as an epidemic (McKenna, 1999).

Unlike the 1999 issue, the 2003 JAMA issue included no articles purporting to show that obesity was an epidemic, although two of the ten scientific articles invoked the "obesity epidemic" as a taken-for-granted fact. Still, 31% of the news coverage of this issue framed obesity as an epidemic. For instance, one article reported: "There's a rapidly spreading epidemic afflicting all regions of the country, all ethnic and economic groups, and all ages. ... It's not SARS, West Nile virus, or Lyme disease. It's obesity" (Delude, 2003). Similarly, in neither year did the JAMA articles use war metaphors. Yet, 46% of the 1999 news sample and 27% of 2003 news reporting used war metaphors. For instance, one 2003 news article quoted a diabetes specialist saying "[obesity's] a time bomb" (Ritter, 2003).

Blurring the lines between different weight categories as almost twice as common in the 1999 news sample (39%) as in the 1999 science sample (20%). Only one of the 2003 JAMA articles blurred the differences between weight categories; however, 53% of news reports on this issue did. Most commonly, these articles took extreme examples in the context of a discussion about overweight or obesity. For instance, one article discussed a "285-pound" man and his "248-pound wife," "a 100-pound 3-year-old girl," "417-pound 15-year-old boy," and children who "had to be weighed on a loading dock scale" in a discussion of "obesity," even though these individuals each have BMIs well above 40, a category that represents less than 5% of the U.S. population (Flegal et al., 2002). After reviewing these extreme cases, the article noted that "59% of Wisconsin adults already are either overweight or obese" (Fauber and Johnson, 2003b), giving the impression that extreme cases are more representative than they are.

As is shown in Table I, the news media are most likely to air scientific debates when reporting on scientific studies that did so. Just as none of the scientific articles in either 1999 or 2003 alluded to any debate over

whether weight *per se* was a meaningful indicator of health (obesity risk debate), neither did any of the press reports on these studies. Just as none of the *JAMA* articles in either the 1999 or 2003 special issues discussed the appropriate cut-off point between healthy and unhealthy weight, neither did news reports on these issues.

4

14

42.

In contrast, the 1999 issue of *JAMA* included an article that showed that physical fitness—as measured by a treadmill test—is a better predictor of health and cardiovascular disease (CVD) than weight (Wei *et al.*, 1999), research that has been cited as proof that one can be "fat and fit." All six of the news articles reporting on this particular study (9% of the sample for that year) discussed the "fat and fit" hypothesis. An article in the *Philadelphia Inquirer* (McCullough, 1999) quoted Steven Blair, a researcher at the Cooper Institute and one of the senior co-authors of the *JAMA* article.

Blair is an advocate of fat-but-fit. His research, including an article in last week's JAMA, shows that being sedentary increases death risk, regardless of weight. "I think lack of activity is a far more important health risk than obesity," he said. "I don't mean to leave diet out completely. Big portions and high-fat foods are a problem. But let's not obsess so much about our weight and focus on getting exercise."

Several researchers point to this line of research as evidence that weight is a poor indicator of health and argue that studies cannot reliably assess the health impact of body weight without controlling statistically for physical fitness (Campos, 2004; Gaesser, 1996). Yet, none of the news reports used such logic to critique any of the 1999 scientific studies, which made claims about body weight without controlling for physical fitness. Rather than drawing out inconsistencies among studies, they stayed close to the studies, press releases, and interviews with lead authors. Indeed, interviews with journalists conducted by the first author suggest that journalists consider this beyond their job duties. In response to a question about how she judges the quality of a research report, one journalist at a major newspaper responded: "We just use prestigious journals 'cause we're not qualified to review the research."

In 2003, two news stories (3% of the sample for that year) discussed the "fat and fit" argument even though none of the 2003 *JAMA* articles did. Neither of these articles were primarily focused on the *JAMA* special issue and both drew on other research or "experts" to make the fit and fat points. For instance, one article cited Cooper Institute research—the same research team that published the 1999 *JAMA* article on the independent health benefits of physical exercise: "Cooper Institute research suggests that moderately obese people, generally no more than 60 to 70 pounds overweight, who exercise regularly and maintain a high level of

42.

fitness, actually live longer than normal weight people who are sedentary" (Fauber and Johnson, 2003b).

Blame and Responsibility

News articles tended to moralize weight above and beyond the science on which they were reporting by attributing obesity to factors under people's individual control—especially those thought to reflect moral character, like choosing to be sedentary or making bad food choices. Table I gives the relative emphasis on individual, structural, and genetic causes of obesity. In 1999, 72% of news reports, compared to 40% of the scientific articles, evoked individual contributors to weight. In 2003, 40% of the science articles vs. 98% of reporting on that science stressed individual responsibility for weight. Among individual behaviors blamed for excess weight, the press was especially likely to focus on food choices and sedentary lifestyles. For instance, a Boston Globe article wrote:

The two prime culprits for this expanding obesity are inactivity and overeating, and TV watching is linked to both of them. This is an important take-home lesson, now that school's ending and children can finally relax. Too often they relax—just like adults—by spending *lazy* hours in front of the TV, which can be hazardous to both age groups' health and well-being. (Delude, 2003, emphasis added)

In many instances, the press used poetic license to paint a picture of sloth and gluttony. "Americans are *gobbling down* more calories than ever, resulting in a 50 percent increase in the nation's obesity rate," begins the first line of one typical news report (Torassa, 1999, emphasis added) on the 1999 study of the "obesity epidemic" (Mokdad *et al.*, 1999). Another news report on the 1999 special issue reports: "Some 300,000 Americans die each year from *eating millions of cookies, hot dogs, potato chips* and other empty calories *during increasingly inactive lives*, according to another report also published in JAMA" (Hudson, 1999, emphasis added). That the scientific studies in question reported *no* data on the eating or exercise behaviors of their respondents did not prevent this or other press reports from speculating about individual excesses. It is as if there were an "incitement to discourse" (Foucault, 1980) about eating so that "[t]he more we talk about it, the more exciting and alluring it becomes both as an attraction *and* as a taboo" (Edgley and Brissett, 1990:269).⁵

In the case of "childhood obesity," it was often parents, schools, and "society" who are blamed. One article opined:

⁵ I first heard this point made by Ann Swidler in response to a presentation of a previous version of this article.

We buy our kids Oreos and Nintendos, eliminate gym classes to improve math scores, sell pizza at school fund-raisers, use the TV as a baby sitter and drive kids everywhere in minivans equipped with cup trays to hold milkshakes and Slurpees. "As a society, we have let kids down," said Dr. Robert Bonow of Northwestern Memorial Hospital. (Ritter, 2003)

This article suggested that "as a society, we have let kids down," invoking collective blame. Yet, the specific examples were targeted at parents. It is parents who allegedly buy Oreos and Nintendos, sell pizza at school fundraisers, "use the TV as a baby sitter," and "drive kids everywhere in minivans equipped with cup trays to hold milkshakes and Slurpees."

In a society in which mothers are expected to be the primary caregivers (Blair Loy, 2003; Hays, 1996; Hochschild, 1989), blaming parents usually means blaming mothers. Thus, in the 1830s, crusaders such as Sylvester Graham and others targeted perceived food excesses "within the home, at table, by women" (Schwartz, 1986:25, cited in Boero, 2007). Likewise, in the summer of 2005, an advertisement running in newspapers blamed "30 years of feminist careers" for a host of social ills, including "an epidemic of childhood obesity and diabetes": "With most mothers working, too few adults and children eat balanced, nutritious, portion-controlled home-cooked meals" (Washington Times, 2005). One of the antidotes for childhood obesity, breastfeeding, clearly weighs more heavily on mothers than on fathers. Drawing on a scientific study that is not in our sample, a *Chicago Sun-Times* article cited breastfeeding as the first "step to fitness."

14

34

42.

It's far easier to prevent childhood obesity than treat it. And the time to start is infancy. Breast-fed babies are 22 percent less likely to become overweight adolescents than bottle-fed babies, according to a study reported in the *Journal of the American Medical Association*. Bottle-feeding parents might make their babies finish the bottle even when the kids feel full, the researchers found. Also, breast-fed babies have lower levels of insulin, which promotes fat storage. (Ritter, 2003)

Discussions of childhood obesity were often racialized. For instance, one article criticized cultural preferences for heavier female bodies among African Americans as responsible for unhealthy body weight among African-American women.

"I'm not losing a damn pound," proclaims actress/singer Queen Latifah. Given her spot on People's "50 Most Beautiful People" list, why should she? As she rightly points out: "I look like America!" But in light of the recent revelations by the American Cancer Society study—attributing 20 percent of cancers in women, and 14 percent in men—to excess body weight, is that really such a good thing? ... The mainstream media continued to dwell on the dangers of the epidemiologically small number of the mostly white and affluent anorexics and bulimics, while heralding surveys that found a greater acceptance of overweight and obesity among African American girls as salutary signs of "self-respect." Do such attitudes

contribute to the disproportionate percentages of obesity among minorities? No one seems willing to ask—much less say. But as Critser points out, "such sidestepping denies poor minority girls a principal—if sometimes unpleasant—psychological incentive to lose weight: that of social stigma." (Grossman, 2003)

Thus the "obesity epidemic" is used to make an argument in support of *increasing* the stigmatization of African-American women.

The article that blamed childhood obesity on Oreos, Nintendos, Slurpees, and television continued: "The percentage of kids age 6 through 11 who are overweight has more than tripled in 30 years, to 15 percent, with the rates generally higher among Latinos and African Americans" (Ritter, 2003). This could imply collective responsibility for minority children, but given the focus on parental responsibility in this article, it is easily read as evidence of bad parenting among minority groups. Indeed, news articles that mentioned the poor, blacks, or Latinos were statistically more likely, compared to those that did not mention these groups, to ascribe higher weights to poor food or exercise choices.⁶

In both years, our news sample was more likely than the science sample to invoke individual blame, but the news sample was not consistently more likely to emphasize systemic blame. In 1999, 58% of the news reports, compared to 30% of the JAMA articles, evoked social-structural contributors to obesity, including the food industry, the car culture, or urban planning. However, in 2003, 30% of the JAMA articles, but only 12% of news reporting on those articles, mentioned social-structural contributors. In both years, the news sources were more likely to mention social-structural contributors when discussing the poor, minorities, or children. One article quoted the coordinator of a food pantry who serves many poor families on Milwaukee's south side, who explained: "It's hard to eat healthy when you don't have the gas on or you're sleeping on the floor and you don't have a refrigerator" (Fauber and Johnson, 2003a). But most of the time, mentioning social-structural factors did not serve to let individuals off the hook; rather, industry and consumers were likely to be held jointly responsible, as in this article: "They're pushing these supersized foods at restaurants, and customers want value for their dollar Am I going to go to the restaurants where I get a 3-ounce burger for \$3, or to the one where I get an 8-ounce burger for \$3?" (Winiarski, 1999).

Only 10% of articles in the 1999 JAMA issue and 10% of news reporting on that issue mentioned genetic contributors to obesity. In 2003, only 3% of the news mentioned genetic contributors to obesity, even though these were discussed by 20% of the corresponding science sample. This lack of discussion, in the news and science alike, is striking given the

⁶ Figures for this and the following results, on differences in framing by demographic variables discussed, are available on request.

increased "geneticization" (Lippman, 1998) of a wide range of conditions and behavior. That the press hardly ever mentioned genetic contributors to weight, even when they were mentioned in the scientific journal on which they were reporting, is striking and demonstrates the extent to which the news tends to attribute body size to individual volition. This, in turn, discredits claims that people should be protected from weight-based discrimination, since such protection is generally accorded to immutable traits, not chosen behavior (see Saguy and Riley, 2005).

Finally, Table I gives the proportion of scientific and news articles that cite particular weight-loss techniques or strategies, including individual changes to exercise or diet, any policy solutions, weight-loss drugs, or weight-loss surgery. Here, there is no clear pattern to the differences between science and media framing. Among solutions for perceived excess body weight, both scientific and news discussions were most likely to discuss individual behavior modification, especially weight-loss diets or exercise. In 1999, 80% of the science sample and 74% of the news sample mentioned people making changes to their diet or exercise patterns to lose weight. In 2003, these figures were 90% and 81% for the science and news, respectively. For instance, the 2003 special issue of JAMA featured a metaanalysis and an editorial that explicitly addressed the efficacy and safety of low-carbohydrate diets and a research article on the efficacy of a commercial weight-loss program. It reported an average weight loss on Weight Watchers of less than 6.5 pounds after 2 years and was inconclusive as to the efficacy of low-carbohydrate diets relative to higher-carbohydrate diets. Reporting on this study, the title of a *Philadelphia Inquirer* optimistically ensured readers "you can lose weight!," proclaiming in the first line: "The Atkins diet, Weight Watchers, even just getting off the couch can eliminate pounds. But there's still no magic formula" (Uhlman, 2003).

14

42.

Policy solutions were discussed considerably less often than individual behavior modification. Nonetheless, in 1999, half of the science sample and 35% of the news sample mentioned some sort of policy solution. These figures were 20% and 17% for the 2003 science and news, respectively. For instance, one news commentary reported:

Obesity is a "ticking time bomb in the health-care system," warned the American Obesity Association at a public health conference in September in Washington. The group called for a "fat tax" on high-calorie food to fund an anti-pudge campaign and urged laws requiring insurers to cover the cost of weight-loss programs. (Jacobs, 2000)

This particular article was critical of "health crusaders who've sued and taxed Big Tobacco to the wall [and who] are aiming at another big, fat target: Big Fat," asking readers "do you really want the health police shouting 'Drop the chalupa!' in your kitchen?" and concluding

42.

"Americans will lose more than pounds if we give up responsibility for our own choices, and for the consequences that ensue."

Policy solutions were statistically more likely to be discussed, including favorably, when reporting on minorities or the poor, who may be perceived as lacking the resources to take action on their own. For instance, one 1999 article reported:

Sometimes all that's needed is a little push. Allen used a \$25,000 grant from the Palmetto Health Alliance to offer aerobics classes to women in two Columbia housing communities who could not otherwise afford it. Participants are hooked. "They're becoming addicted to it," she said. "Given the opportunity and encouraged to do so, people will do the things that most people do to keep themselves healthy." (Winiarski, 1999)

Discussion of public policy solutions were especially common when children were mentioned, consistent with the view that children as not fully capable of making their own choices. One article reported:

The War on Obesity is beginning to target kids, who continue to get fatter at alarming rates. Dozens of schools, hospitals, YMCAs and other Chicago area institutions are trying innovative approaches to preventing obesity, ranging from nutrition puppets at Head Start centers to sleek fitness centers at high schools. (Ritter, 2003)

Weight-loss drugs were discussed in 20% of the 1999 science sample and in 30% of the 1999 news sample. In 2003, these figures were 60% for the science and 25% for the news samples. News media discussions of weight-loss drugs usually highlighted their ineffectiveness, thus serving to further emphasize the importance of behavior modification. For instance, one article quoted a Professor of Nutrition discussing weight-loss drugs as an elusive "magic bullet" that distracts people from making necessary lifestyle changes: "Fewer people are doing what they know they should do. Instead, everybody just wants a magic bullet" (Hsu, 1999). Another article quoted Michael Jacobson, the director of the Center for Science in the Public Interest, saying: "It may be that we enjoy our slothful, gluttonous lifestyle so much that we'll just remain overweight until we come up with a drug to cure it" (McCullough, 1999).

Weight-loss surgery was not mentioned in any of the 1999 science reports and in only one of the 1999 news reports. Twenty percent of the 2003 science reports discussed weight-loss surgery, compared to 8% of the 2003 news reports. Because weight-loss surgery does not repair faulty biological function (and in fact impairs some aspects of the proper functioning of the stomach, such as assimilation of nutrients and vitamins),

⁷ This is because there were several articles in the 2003 *JAMA* issue that tested weight-loss drugs, but few news reports that discussed those particular articles, which speaks to the phenomenon of selective reporting discussed in the next section.

discussions of such surgery are quite consistent with blaming individuals for their weight, their inability to lose it, and their apparent need for drastic surgery to compensate for their personal failings. For instance, one article quoted a patient who said that she had surgery because she "could not do it on [her] own" (Fauber and Johnson, 2003b), obesity researcher James Hill who commented that "it would be sad to think that people feel they can eat poorly, be inactive, and when they get overweight, have it fixed by surgery," and a surgeon who blamed patients who do not lose weight or regain it after the surgery:

Patients can cheat by eating certain types of food that limit their weight loss or cause them to gain back weight. About 20% to 30% of people who get the lap band fail to lose more than 50% of their excess weight, Chua said, adding, "There are failures who don't lose anything. They cheat."

Despite increased medicalization, body weight and eating are as moralized as ever.

Selective Reporting, Drama, and Individualizing

4

34

42.

Why did the press dramatize the risks of obesity by using words like "epidemic" and "war" and by confusing weight categories so as to give an impression that the population is heavier or sicker than it is? As we review above, media scholars have shown that there are several mechanisms that lead to the sensationalism and individualizing of social problems, and one could interpret our findings to be the result of these tendencies.

Further analyses demonstrate, however, an important mechanism through which the news sensationalizes its reporting on science: selective reporting. We find that journalists are more likely to report on articles that lend themselves to dramatization than on those that do not. We tested this by comparing framing in news reports based on which studies they covered. Specifically, for each issue of *JAMA*, we compared news reports that mentioned the most reported-on study with those that did not mention that study. We also compared news reports that mentioned the second-most reported-on study with those that did not mention that study. Table II gives the proportion of news reports employing particular frames when there is a statistically significant difference between news reports that mention one of the most publicized scientific articles and those that do not mention this study.

In 1999, 43 news articles, over half the total sample for that year, discussed "The Spread of the Obesity Epidemic" (Mokdad *et al.*, 1999). This

42.

	Mentioned Study	Do Not Mention Study	Difference
Epidemic	0.67	0.19	0.48***
Blurring categories	0.94	0.31	0.63**
Individual blame	0.88	0.64	0.24*

Table II. News Framing by Scientific Article Covered

***p < .000; **p < .001; *p < .005, based on a Fisher's Exact Test (two-sided). *Note*: The scientific studies mentioned were Mokdad *et al.*, Schwimmer *et al.*, and Allison *et al.* for epidemic, blurring the weight categories, and individual blame, respectively.

article used a series of maps showing the percentage of people in each state with a BMI of 30 or higher over time. The maps showed that, while only three states had less than 10% of the population with a BMI over 30 in 1991, no states had such low rates in 1998. Moreover, while only three states had over 15% of the population with a BMI over 30 in 1991, the overwhelming majority of the states fell into this category in 1998. As political scientist Eric Oliver has commented, "picturing the rise of obesity in this geographic way makes it seem like it is some type of spreading infection, like a virus that migrates from one state to another" (Oliver, 2006:616–617), and that was precisely the point. A front-page *Milwaukee Journal Sentinel* article quoted the authors saying 'rarely do chronic conditions such as obesity spread with the speed and dispersion characteristics of a communicable disease epidemic' (Fauber, 1999).

The press's greater tendency, compared to the original scientific research, to characterize obesity as an epidemic in 1999 seems to be largely due to its overwhelming focus on this particular study. Articles that reported on this study were significantly more likely, compared to articles that did not discuss this study, to refer to obesity as an epidemic (p < .000). Among the 43 news articles that reported on "The Spread of the Obesity Epidemic" (Mokdad $et\ al.$, 1999), 29—or 67%—described obesity as an "epidemic." In comparison, among 1999 press articles that did not cite this study, only 19% invoked an "obesity epidemic."

The fact that press reporting in 2003 was more likely to blur the lines between different weight categories can be partly attributed to the disproportionate focus in 2003 on the one article that did blur the lines between different weight categories, "Health Related Quality of Life of Severely Obese Children and Adolescents" (Schwimmer *et al.*, 2003). Although the title referred to "severely obese" children and the abstract specified that the average BMI of participants was 34.7, both the abstract and article often referred simply to "obese" children. The first line of the article abstract presents the context as: "One in 7 US children and adolescents is obese, yet little is known about their health-related quality of life (QOL),"

falsely implying that the research sample was representative of this larger group of youngsters. It reported the findings as: "Compared with healthy children and adolescents, obese children and adolescents reported significantly (p < .001) lower health-related QOL in all domains"

4

14

34

42.

Similarly, almost all of the press reports on this study (15/16) suggested that this study pertained to obese or overweight children *in general*, rarely mentioning that the youngsters in the study were hospitalized and had serious health conditions. "Obesity hurts kids' lifestyles like cancer," proclaimed one typical news headline (Fauber, 2003). Similarly, a *USA Today* article quoted the lead author saying: "This study demonstrates how difficult it is to be an obese child" (Hellmich, 2003). In comparison, 31% of news articles that did not explicitly mention the quality-of-life article blurred the lines between weight categories, a still sizable but much smaller proportion.

Selective reporting can help shed light on why the press was more likely than the science on which it was reporting to represent obesity as an epidemic and to blur weight categories, but it does not seem to explain the greater tendency of the press in 1999 or 2003 to use war metaphors like "battle" or "time bomb." This language was not significantly more likely, for either given year, to appear in news articles that reported on the 1999 "obesity epidemic" article, the 1999 "annual deaths" article, the 2003 "low-carb" article (Bravata *et al.*, 2003), or the 2003 "Quality of Life" article (Schwimmer *et al.*, 2003). This suggests that this particular difference is driven by general media routines that favor "war" imagery rather than by selective reporting. Use of such metaphors in press releases—a topic we discuss below—may also foster their prevalence in the news.

Why is the press more likely to focus on individual contributors to obesity than are the scientific studies on which they are reporting? Because almost all the press reports in 2003 blamed weight on individual factors, we have virtually no variance to explain for this year. In 1999, over 70% of press reports discussed individual contributors to weight, but we can still find variation among these 69 news articles. Twenty-four of these articles reported on Allison *et al.*'s (1999) "Annual Deaths Attributable to Obesity in the United States." Using methodology originally formulated to calculate "tobacco deaths," Allison *et al.* assumed that "obesity-attributable deaths" were avoidable and due to unhealthy individual choices. The disproportionate attention given to this article by the media seems to have contributed to the framing of weight as a product of individual choices or behaviors. Articles that mentioned the "annual deaths" study

⁸ Although it comes close in the case of the "annual deaths" article (p = .146).

were significantly more likely than articles that did not mention this study (p < .05) to suggest that weight is determined by individual behavior. Eighty-eight percent of press reports on this scientific study invoked individual contributors to weight, compared to 64% of articles that did not explicitly discuss this study. In other words, it appears that one mechanism by which the news tended to stress individual contributors to social issues was by reporting disproportionately on science that lent itself to this analysis.

The Role of Press Releases

We find some evidence that press releases also shape both what gets reported and how it is framed. Press releases offer prepackaged news that can easily be turned into copy by time-pressed journalists. In 1999, coverage in the JAMA or a CDC press release was an excellent predictor of news coverage. The four studies that were most prominently featured in the 1999 JAMA press release (Allison et al., 1999; Heymsfield et al., 1999; Koplan and Dietz, 1999; Mokdad et al., 1999) were the same ones that received the most media attention, although not in this precise order. The CDC also issued a press release on the article proclaiming an "obesity epidemic" (Mokdad et al., 1999), which received by far the most news coverage of the 1999 JAMA issue. On the other hand, a study on the effects of exercise (Jakicic et al., 1999) was discussed in only six news articles, even though it was publicized by press releases from Brown University and by the NIH. This particular NIH press release included short paragraphs, each dedicated to one of three JAMA articles (Jakicic et al., 1999; Ludwig et al., 1999; Robinson 1999). One of these other articles (Ludwig et al., 1999) was also discussed in only six news articles, despite this press release and a longer NIH press release focusing only on this study. The third (Robinson, 1999), which was only publicized in this cursory manner, was discussed in five news articles.

In 2003, coverage by press releases was a less reliable predictor of news coverage than in 1999. On one hand, the article that received the most news coverage (Bravata *et al.*, 2003) was publicized by both the *JAMA* press release and a page-and-a-half individualized press release by Stanford University, and the second-most covered study in the media (Schwimmer *et al.*, 2003) was the object of a detailed press release by the University of California, San Diego (UCSD). On the other hand

⁹ The press release featured the editorial before the "annual deaths" article, but the latter received more media attention than the former.

Schwimmer *et al.*'s research was not featured in the *JAMA* press release at all and an article on a weight-loss drug (Gadde *et al.*, 2003) was discussed in nine news articles despite the fact that it had not been publicized by a press release that we could locate. The five articles featured in order of prominence in the *JAMA* press releases (Bravata *et al.*, 2003; Bray, 2003; Heshka *et al.*, 2003; Hu *et al.*, 2003; Yanovski and Yanovski, 2003) were discussed in 6, 10, 19, 3, and 1 articles, respectively.

The way press releases present science seems to shape news framing. In 1999, when the news reports were more likely than the JAMA articles to use war metaphors, refer to obesity as an epidemic, or to stress individual contributors toward obesity, the official JAMA press release also included all three of those frames. In 2003, when the press was more likely than the JAMA articles to use war metaphors, stress individual contributors toward obesity, and blur the lines between different weight categories, the official JAMA press release included the first two of these three frames. This underscores the important intermediary role that press releases have in framing news reports. The 2003 official JAMA press release, which did not mention the quality of life article (Schwimmer et al., 2003), did not blur the lines between weight categories. However, the UCSD press release on this particular study did blur the lines between weight categories considerably, reporting in the first paragraph: "Obese children and their parents report that health-related quality of life for overweight kids is significantly impaired and as bad as that experienced by children with cancer who are undergoing chemotherapy." The use of "overweight" to describe children with an average BMI of almost 35 and multiple health problems makes the subjects seem more representative of the larger population of "overweight" children than they truly are. 10

CONCLUSION

14

34

42.

In this article, we exploit a unique sample of (1) scientific articles on weight and health, (2) press releases on those studies, and (3) and news reports on those same studies to shed new light on how the news media filter and translate scientific information to the lay public. We found some

This issue is further confused by the fact that, at the time of this writing, the CDC does not use the term "obese" in reference to children and, instead, designates children above the 95th percentile for BMI norms as "overweight" and those above the 85th percentile for BMI norms as "at risk of overweight." Recently, in response the International Obesity Task Force (IOTF), a lobby with ties to the pharmaceutical industry (Moyniham, 2006), an expert committee of the American Medical Association "tentatively decided" to alter these definitions so that children above the 85th percentile would be reclassified as "overweight" and those above the 95th percentile as "obese."

42.

evidence that news media have "thrown fat in the fire," enflaming the issue of obesity, while simultaneously highlighting individual blame for weight. Compared to the science on which they were reporting, the news media used more evocative metaphors and language to discuss this putative crisis. The use of the alarming epidemic metaphor was largely attributable to the disproportionate media attention received by one of ten scientific articles in the special issue. Selective reporting also partially explained the news media's greater tendency to blame individuals for their weight. Our findings further suggest that press releases foster dramatization.

This study has shown how scientific and news media discussions of weight assess blame and responsibility for body weight. We found that both science and the news blame individual choices for excess weight more than social-structural or genetic factors, and that the news further accentuates the focus on individual blame. Individual solutions are even more likely to be invoked, compared to policy or biological solutions. Discussing certain groups—including children, African Americans, Latinos, or the poor—increases the likelihood of blaming individuals (or their parents) or social-structural factors and of discussing policy solutions. In that women are usually held responsible as parents, parental blame is implicitly, and sometimes explicitly, targeted at women.

These findings support the contention that scientists work as "parajournalists" (Schudson, 2003), writing up their studies—especially the abstract—with journalists in mind. They then frame their research via press releases and interviews with journalists. A reward structure in which, all things being equal, alarmist studies are more likely to be covered in the media may make scientists even more prone to presenting their findings in the most dramatic light possible.

Do journalists, in turn, function as "parascientists"? No, if the definition of a parascientist involves independently evaluating research studies. However, journalists can raise questions about research by citing skeptical "experts" or shape public understandings of the scientific field by featuring some pieces of research while ignoring others. ¹¹ We found ample evidence that the news media report more on some studies than on others, but little evidence of the news media expressing skepticism of the research on which they were reporting, either directly or via new sources. Future work should examine when such skepticism is more likely. We would expect this to be the case when the research flies in the face of received wisdom or when an alternative view has crossed a tipping point—either

¹¹ Journalists also often play a key role in demarcating the boundaries of science (see Gieryn and Figert, 1990).

with the individual journalist or for a perceived readership—in which it becomes an obligatory reference. Related to this, future work should also examine how the news media report on conflicting or competing findings by scientists. Which kinds of claims, findings, or scientists are given most credibility by the news media and how is such credibility conveyed?

In that how public issues are framed shapes private and public action, the patterns that we have documented have far-reaching social implications. As obesity is widely accepted as a dire health risk, we may become more tolerant of health risks associated with weight-loss treatments, enact public policies designed to promote weight loss on a population level, and prioritize funding for obesity research over competing causes. Indeed, in recent years, funds for tobacco research have declined as funds for obesity research climb (Saguy, 2006).

On the other hand, news reports of "obesity" as a public health crisis may make competing frames of "fat" as a neutral and positive form of biological diversity more difficult to promote. Not only are such news reports likely to reinforce the stigma of fat bodies as diseased bodies, but in that they tend to liken fatness to a health *behavior*, they undermine the claim that that weight is an immutable trait. This presents a challenge for proponents of weight-based anti-discrimination laws. Gay rights activists have faced similar resistance from people who regard sexual "preference" as a choice or lifestyle. Arguments about the genetic basis of homosexuality have been politically contested because it is widely perceived as a prerequisite for gaining civil rights for gays and lesbians.

In sum, science reporting informs lay understandings of health and risk, policy priorities, blame and responsibility, and normative understandings of acceptable and desirable bodies. We invite others to join us in studying public discussions of body weight and their implications for moral hierarchies and social control.

REFERENCES

14

42.

Allison, David B., Kevin R. Fontaine, JoAnn E. Mansen, June Stevens, and Theodore Van-Itallie. 1999. "Annual Deaths Attributable to Obesity in the United States," *JAMA* 282: 16: 1530–1538.

Associated Press. 2006. "Surgeon General: Obesity Epidemic Will Dwarf Terrorism Threat," *Health SciTech*, March 2.

Bennett, W. Lance. 1983. News: The Politics of Illusion. New York: Longman.

Berkowitz, Robert I., Thomas A. Wadden, Andrew M. Tershakovec, and Joanna L. Cronquist. 2003. "Behavior Therapy and Sibutramine for the Treatment of Adolescent Obesity: A Randomized Controlled Trial," *JAMA* 289: 14: 1805–1812.
Bish, Connie L., Heidi M. Blanck, Mary K. Serdula, Michele Marcus, Harold W. Kohl III,

Bish, Connie L., Heidi M. Blanck, Mary K. Serdula, Michele Marcus, Harold W. Kohl III, and Laura K. Khan. 2005. "Diet and Physical Activity Behaviors Among Americans Trying to Lose Weight: 2000 Behavioral Risk Factor Surveillance System," *Obesity Research* 13: 596–607.

- 4 14
- Blair, Steven N., and Tim S. Church. 2004. "The Fitness, Obesity, and Health Equation: Is Physical Activity the Common Denominator?" *JAMA* 292: 1232–1234.
- Blair, Steven N., James B. Kampert, Harold W. Kohl I, Carolyn E. Barlow, Caroline A. Macera, Ralph S. Paffenbarger Jr, and Larry W. Gibbons. 1996. "Influences of Cardiorespiratory Fitness and Other Precursors on Cardiovascular Disease and All-Cause Mortality in Men and Women," *JAMA* 276: 3: 205–210.
- Blair, Steven N., Harold W. Kohl I, Carolyn E. Barlow, Ralph S. Paffenbarger Jr, Larry W. Gibbons, and Caroline A. Macera. 1995. "Changes in Physical Fitness and All-Cause Mortality: A Prospective Study of Healthy and Unhealthy Men," JAMA 273: 14.
- Blair-Loy, Mary. 2003. Competing Devotions: Career and Family Among Women Executives. Chicago, IL: University of Chicago Press.
- Bordo, Susan. 1993. *Unbearable Weight: Feminism, Western Culture, and the Body*. Berkeley, CA: University of California Press.
- Bravata, Dena M., Lisa Sanders, Jane Huang, Harlan M. Krumholz, Ingram Olkin, Christopher D. Gardner, and Dawn M. Bravata. 2003. "Efficacy and Safety of Low-Carbohydrate Diets: A Systematic Review," *JAMA* 289: 14: 1837–1850.
- Bray, George A. 2003. "Low-Carbohydrate Diets and Realities of Weight Loss," *JAMA* 289: 4: 1853–1855.
- Brownell, Kelly, and Katherine B. Horgen. 2003. Food Fight: The Inside Story of the Food Industry, America's Obesity Crisis, and What We Can Do About It. New York: McGraw-Hill.
- Calasanti, Toni M., and Kathleen F. Slevin. 2001. Gender, Social Inequalities, and Aging. Lanham, MD: Alta Mira Press.
- Campos, Paul. 2004. The Obesity Myth. New York: Gotham Books.
- Campos, Paul, Abigail Saguy, Paul Ernsberger, Eric Oliver, and Glen Gaesser. 2006. "The Epidemiology of Overweight and Obesity: Public Health Crisis or Moral Panic?" *International Journal of Epidemiology* 35: 1: 55–60.
- Carlsson, Maria E. 2000. "Cancer Patients Seeking Information from Sources Outside the Health Care System," *Supportive Care in Cancer* 8: 6: 453–457.
- Chernin, Kim. 1995. The Hungry Self: Women, Eating, and Identity. New York: HarperCollins.
- Chute, Eleanor. 2006. "Schools Get Healthier; Drinks Companies Agree to Remove Pop," Pittsburgh Post-Gazette, May 4: A-1.
- Clarke, Juanne N., and Michelle M. Everest. 2006. "Cancer in the Mass Print Media: Fear, Uncertainty and the Medical Model," *Social Science and Medicine* 62: 2591–2600.
- Conrad, Peter, and Susan Markens. 2001. "Constructing the 'Gay Gene' in the News: Optimism and Skepticism in the US and British Press," *Health* 5: 3: 373–400.
- Conrad, Peter, and Joseph W. Schneider. 1992. Deviance and Medicalization: From Badness to Sickness. Philadelphia, PA: Temple University Press.
- Cooper, Charlotte. 1998. Fat and Proud: The Politics of Size. London: Women's Press.
- Crawford, Robert. 1980. "Healthism and the Medicalization of Everyday Life," *International Journal of Health Services* 10: 365–388.
- Dalton, Sharon. 2004. Our Overweight Children: What Parents, Schools, and Communities Can Do to Control the Fatness Epidemic. Berkeley, CA: University of California Press.
- Darnton, Robert. 1975. "Writing News and Telling Stories," Daedalus 104: 175-194.
- Delude, Cathryn M. 2003. "Time to Take a Vacation from Television as School Ends, Keep Kids Healthy by Limiting TV Time" *Boston Globe*, June 10: C14.
- Downs, Anthony. 1972. "Up and Down with Ecology: The 'Issue Attention Cycle'," *Public Interest* 28: 38–50.
- Edgley, Charles, and Dennis Brissett. 1990. "Health Nazis and the Cult of the Perfect Body: Some Polemic Observations," *Symbolic Interaction* 13: 2: 257–279.
- Entman, Robert M. 1993. "Framing: Toward Clarification of a Fractured Paradigm," *Journal of Communication* 43: 4: 51–58.
- Epstein, Steven. 1996. Impure Science: AIDS. Berkeley, CA: University of California Press.

Ericson, Richard V., Patricia M. Baranek, and Janet B. C. Chan. 1989. *Negotiating Control:* A Study of News Sources. Toronto, Canada: University of Toronto Press.

- Ernsberger, Paul, and Paul Haskew. 1987. Rethinking Obesity: An Alternative View of its Health Implications. New York: Human Sciences Press.
- Esposito, Katherine, Alessandro Pontillo, Carmen Di Palo, Giovanni Giugliano, Masella Giovanni, Raffaele Marfell Mariangela, and Dario Giugliano. 2003. "Effect of Weight Loss and Lifestyle Changes on Vascular Inflammatory Markers in Obese Women: A Randomized Trial." *JAMA* 289: 14: 1799–1804.
- Ettinger, Mark P., Thomas W. Littlejohn, Sherwyn L. Schwartz, Stuart R. Weiss, Harris H. McIlwain, Steven B. Heymsfield, George A. Bray, William G. Roberts, Eugene R. Heyman, Nancy Stambler, Stanley Heshka, Catherine Vicary, and Hans-Peter Guler. 2003. "Recombinant Variant of Ciliary Neurotrophic Factor for Weight Loss in Obese Adults: A Randomized, Dose-Ranging Study," *JAMA* 289: 14: 1826–1832. Fauber, John. 1999. "Obesity 'Epidemic' Sweeping Nation: Studies Show Sharp Increase in
- Fauber, John. 1999. "Obesity 'Epidemic' Sweeping Nation: Studies Show Sharp Increase in Percentage of Dangerously Overweight Adults in U.S.," Milwaukee Journal Sentinel, October 27: 1.
- Fauber, John. 2003. "Obesity Hurts Kids' Lifestyles Like Cancer; Study Finds," *Milwaukee Journal Sentinel*, April 9: 01A.
- Fauber, John, and Mark Johnson. 2003a. "Super-Size Problem; Americans' Struggle with Obesity Takes Breathtaking Toll," *Milwaukee Journal Sentinel*, July 6: 01A.
- Fauber, John, and Mark Johnson. 2003b. "Losing Weight; Heavy Burden; The Obesity Epidemic," *Milwaukee Journal Sentinel*, July 8: 01A.
- Flegal, K. M., Margaret D. Carroll, Cynthia L. Ogden, and Clifford L. Johnson. 2002. "Prevalence and Trends in Obesity Among US Adults, 1999–2000," *JAMA* 288: 14: 1723–1727.
- Flegal, K. M., B. I. Graubard, D. F. Williamson, and M. H. Gail. 2005. "Excess Deaths Associated with Underweight, Overweight, and Obesity," *JAMA* 293: 15: 1861–1867.
- Foucault, Michel. 1980. History of Sexuality. New York: Vintage Books.

14

34

- Fraser, Laura. 1998. Losing It: False Hopes and Fat Profits in the Diet Industry. New York: Penguin Putnam Inc.
- Gadde, Kishore M., Deborah Franciscy, H. R. Wagner II, and K. R. R. Krishnan. 2003. "Zonisamide for Weight Loss in Obese Adults: A Randomized Controlled Trial," *JAMA* 289: 14: 1820–1825.
- Gaesser, Glenn A. 1996. Big Fat Lies: The Truth About Your Weight and Your Health. New York: Fawcett Columbine.
- Gamson, William. 1992. Talking Politics. Cambridge: Cambridge University Press.
- Gans, Herbert. 1979. Deciding What's News. New York: Patheon.
- Gieryn, Thomas F., and Anne E. Figert. 1990. "Ingredients for a Theory of Science in Society: O-Rings, Ice Water, C-Clamp, Richard Feynman, and the Press," In Susan E. Cozzens and Thomas F. Gieryn (eds), *Theories of Science in Society*: pp. 67–97. Bloomington, IN: Indiana University Press.
- Glassner, Barry. 2000. The Culture of Fear: Why Americans Are Afraid of the Wrong Things. New York: Basic Books.
- Goffman, Erving. 1963. Stigma: Notes on the Management of a Spoiled Identity. New York: Prentice-Hall.
- Gusfield, Joseph R. 1981. The Culture of Public Problems: Drinking-Driving and the Symbolic Order. Chicago, IL: University of Chicago Press.
- Hays, Sharon. 1996. The Cultural Contradictions of Motherhood. New Haven/London: Yale University Press.
- Hellmich, Nanci. 2003. "It's Tough Being an Obese Kid," USA Today, April 9: 8D.
- Heshka, Stanley, James W. Anderson, Richard L. Atkinson, Frank L. Greenway, James O.
 Hill, Stephen D. Phinney, Ronette L. Kolotkin, Karen Miller-Kovach, and F. Xavier Pi-Sunyer. 2003. "Weight Loss with Self-Help Compared with a Structured Commercial Program: A Randomized Trial," *JAMA* 289: 14: 1792–1798.

4

- Hesse-Biber, Sharlene. 1996. Am I Thin Enough Yet?: The Cult of Thinness and the Commericialization of Identity. New York: Oxford University Press.
- Heymsfield, Steven B., Andrew S. Greenberg, Ken Fujioka, Russell M. Dixon, Robert Kushner, Thomas Hunt, John A. Lubina, Janet Patane, Barbara Self, Pam Hunt, and Mark McCamish. 1999. "Recombinant Leptin for Weight Loss in Obese and Lean Adults: A Randomized, Controlled, Dose-Escalation Trial," *JAMA* 282: 16: 1568–1575.
- Hochschild, Arlie. 1989. *The Second Shift: Working Parents and the Revolution at Home.* New York: Viking Penguin Inc.
- Hsu, Karen. 1999. "As US Obesity Rises, Scientists See Health Crisis," *Boston Globe*, October 27: A3.
- Hu, Frank B., Tricia Y. Li, Graham A. Colditz, Walter C. Willett, and JoAnn E. Mansen. 2003. "Television Watching and Other Sedentary Behaviors in Relation to Risk of Obesity and Type 2 Diabetes Mellitus in Women," *JAMA* 289: 14: 1785–1791.
- Hudson, Mike. 1999. "America Is Fat, Getting Fatter; Nearly 1 in 5 Obese; Results Can Be Fatal," *Times-Picayune*, October 27: A1.
- Jacobs, Joanne. 2000. "The Fat Patrol Is Closing in: They'll Tax Your Cheeseburger and Lecture You to Boot," San Jose Mercury News, January 8.
- Jakicic, John M., Carena Winters, Wei Lang, and Rena R. Wing. 1999. "Effects of Intermittent Exercise and Use of Home Exercise Equipment on Adherence, Weight Loss, and Fitness in Overweight Women." JAMA 282: 16: 1554–1560.
- Kantor, Jodi. 2007. "In Obesity Fight, Many Fear a Note from School," New York Times, January 8.
- Katzmarzyk, Peter T., Timothy S. Church, Ian Janssen, Robert Ross, and Steven N. Blair. 2005. "Metabolic Syndrome, Obesity, and Mortality: Impact of Cardiorespiratory Fitness," *Diabetes Care* 28: 2: 391–397.
- Kuczmarski, Robert J., Katherine M. Flegal, Stephen M. Campbell, and Clifford L. Johnson. 1994. "Increasing Prevalence of Overweight Among US Adults. The National Health and Nutrition Examination Surveys, 1960 to 1991," *JAMA* 272: 205–211.
- Kwan, Samantha. 2007. "Contested Meanings About Body, Health, and Weight: Government, Activists, and Industry Framing Competitions Over the Overweight Body," unpublished manuscript.
- Lawrence, Regina G. 2003. "Framing Obesity: The Evolution of News Discourse on a Public Health Issue," *Press/Politics* 9: 3: 56–75.
- LeBesco, Kathleen. 2004. "The Queerness of Fat," In *Revolting Bodies? The Struggle to Redefine Fat Identity*: pp. 85–97. Boston, MA: University of Massachusetts Press.
- Linn, Susan. 2004. Consuming Kids: The Hostile Takeover of Childhood. New York: New Press.
- Lippman, Abby. 1998. "The Politics of Health: Geneticization Versus Health Promotion," In Susan Sherwin (ed), *The Politics of Women's Health: Exploring Agency and Autonomy*: pp. 64–82. Philadelphia, PA: Temple University Press.
- Lovric, Lydia. 2005. "Child Obesity a Form of Abuse," Winnipeg Sun, June 6.
- Ludwig, David, Mark A. Pereira, Candyce H. Kroenke, Joan E. Hilner, Linda Van Horn, Martha L. Slattery, and David R. Jacobs. 1999. "Dietary Fiber, Weight Gain, and Cardiovascular Disease Risk Factors in Young Adults," *JAMA* 282: 16: 1539–1546.
- Lyman, Stanford M. 1989. *The Seven Deadly Sins: Society and Evil.* Dix Hills, NY: General Hall, Inc.
- McCullough, Marie. 1999. "Time for New Approaches to Weight Loss," *Philadelphia Inquirer*, October 27.
- McKenna, M. A. J. 1999. "Georgians' Weight Problem Is Growing Fast, Study Says," *Atlanta Journal and Constitution*, October 27: 1A.
- Millman, Marcia. 1980. Such a Pretty Face: Being Fat in America. New York: W.W. Norton & Company.
- Mokdad, Ali H., James S. Marks, Donna F. Stroup, and Julie L. Gerberding. 2004. "Actual Causes of Death in the United States, 2000," *JAMA* 291: 10: 1238–1245.

Mokdad, Ali H., Mary K. Serdula, William H. Dietz, Barbara A. Bowman, James S. Marks, and Jeffrey P. Koplan. 1999. "The Spread of the Obesity Epidemic in the United States, 1991–1998," *JAMA* 282: 16: 1519–1522.

- Moyniham, Ray. 2006. "Expanding Definitions of Obesity May Harm Children," *British Medical Journal* 332: 1412.
- Must, Aviva, Jennifer Spadano, Eugenie H. Coakley, Alison E. Field, Graham Colditz, and William H. Dietz. 1999. "The Disease Burden Associated with Overweight and Obesity," JAMA 282: 16: 1523–1529.
- Nelkin, Dorothy. 1987. Selling Science: How the Press Covers Science and Technology. New York: Freeman.
- Nestle, Marion. 2002. Food Politics: How the Food Industry Influences Nutrition and Health. Berkeley, CA: University of California Press.
- Nichter, Mimi. 2000. Fat Talk: What Girls and the Parents Say About Dieting. Cambridge, MA: Harvard University Press.
- Oliver, J. Eric.. 2005. Fat Politics: The Real Story Behind America's Obesity Epidemic. New York: Oxford University Press.
- Oliver, J. Eric.. 2006. "The Politics of Pathology: How Obesity Became an Epidemic Disease," *Perspectives in Biology and Medicine* 49: 4: 611–627.
- Ritter, Jim. 2003. "Kids on Front Lines of Obesity War," Chicago Sun-Times, July 1: 8.
- Robinson, Thomas N. 1999. "Reducing Children's Television Viewing to Prevent Obesity: A Randomized Controlled Trial," *JAMA* 282: 16: 1561–1567.
- Saguy, Abigail. 2006. "Are Americans Too Fat? Conversation with Stanton Glantz," Contexts 5: 2: 11–13.
- Saguy, Abigail, and Kevin W. Riley. 2005. "Weighing Both Sides: Morality, Mortality and Framing Contests Over Obesity," *Journal of Health Politics, Policy, and Law* 30: 5: 869–921.
- Santry, Heena P., Daniel L. Gillen, and Diane S. Lauderdale. 2005. "Trends in Bariatric Surgical Procedures," JAMA 294: 15: 1909–1917.
- Schlesinger, Mark. 2002. "A Loss of Faith: The Sources of Reduced Political Legitimacy for the American Medical Profession," *Milbank Quarterly* 80: 2: 185–235.
- Schoenfielder, Lisa, and Barbe Wieser. 1983. Shadow on a Tightrope: Writings by Women on Fat Oppression. Iowa City, IA: Aunt Lute Book Company.
- Schudson, Michael. 2003. The Sociology of the News. New York: W. W. Norton & Company.
- Schwartz, Hillel. 1986. Never Satisfied: A Cultural History of Diets, Fantasies, and Fat. London: Collier Macmillan Publishers.
- Schwimmer, Jeffrey B., Tasha M. Burwinkle, and James W. Varni. 2003. "Health-Related Quality of Life of Severely Obese Children and Adolescents," *JAMA* 289: 14: 1813–1819.
- Semuels, Alana. 2005. "Bigger Waistlines, Shorter Lifespans; Obesity a 'Threatening Storm'," *Pittsburgh Post-Gazette*, March 17: A-1.
- Snow, David, and Robert D. Benford. 1988. "Ideology, Frame Resonance and Participant Mobilization," *International Social Movement Research* 1: 197–217.
- Sobal, Jeffery. 1995. "The Medicalization and Demedicalization of Obesity," In Donna Maurer and Jeffery Sobal (eds), *Eating Agendas*: pp. 67–90. New York: Aldine de Gruyter.
- Spector, Malcolm, and John I. Kitsuse. 1977. *Constructing Social Problems*. Menlo Park, CA: Cummings Publishing Company, Inc.
- Stein, Howard F. 1982. "Wellness as Illusion," Delaware Medical Journal 54: 11: 637-641.
- Tarrow, Sidney. 1992. "Mentalities, Political Cultures, and Collective Action Frames: Constructing Meanings Through Action," In Aldon D. Morris and Carol M. Mueller (eds), Frontiers in Social Movement Theory: pp. 174–202. New Haven/London: Yale University Press.
- Tartamella, Lisa, Elaine Herscher, and Chris Woolston. 2005. Generation Extra Large: Rescuing Our Children from the Epidemic of Obesity. New York: Basic Books.
- Tesh, Sylvia N. 1988. *Hidden Arguments: Political Ideology and Disease Prevention Policy*. New Brunswick, NJ: Rutgers University Press.

- Thompson, Becky W. 1994. A Hunger So Wide and So Deep: A Multiracial View of Women's Eating Problems. Minneapolis, MN: University of Minnesota Press.
- Torassa, Ulysses P. 1999. "Americans Keep Packing on the Pounds," San Francisco Examiner, October 27: 1A.
- Tuchman, Gaye. 1978. Making News: A Study in the Construction of Reality. New York: Free Press.
- Wann, Marilyn. 1999. FAT! SO?: Because You Don't Have to Apologize for Your Size. Berkeley, CA: Ten Speed Press.
- Wei, Ming, James B. Kampert, Carolyn E. Barlow, Milton Z. Nichaman, Larry W. Gibbons, Ralph S. Paffenbarger Jr, and Steven N. Blair. 1999. "Relationship Between Low Cardiorespiratory Fitness and Mortality in Normal-Weight, Overweight, and Obese Men," JAMA 282: 16: 1547–1553.
- Winiarski, Kathryn. 1999. "Over Half of South Carolina Adults Are Overweight, Health Department," *State*, November 23.
- Wolf, Naomi. 1991. The Beauty Myth: How Images of Beauty Are Used Against Women. New York: William Morrow and Company, Inc.

Proof Correction Marks

Please correct and return your proofs using the proof correction marks below. For a more detailed look at using these marks please reference the most recent edition of The Chicago Manual of Style and visit them on the Web at: http://www.chicagomanualofstyle.org/home. html

Instruction to typesetter	Textual mark	Marginal mark
Leave unchanged	· · · under matter to remain	Stet
Insert in text the matter	^	↑ followed by new
indicated in the margin		matter
Delete	Through single character, rule or underline or	0
	If through all characters to be deleted	
Substitute character or		new character λ or
substitute part of one or	through characters	new characters &
more word(s) Change to italics	— under matter to be changed	(ital)
Change to capitals	■ under matter to be changed	Caps
Change to small capitals	= under matter to be changed	
Change to bold type	under matter to be changed	(b)
Change to bold italic	□ under matter to be changed	(bf+ital)
Change to lower case	B	<u></u>
Insert superscript	✓	∨ under character
		e.g. ♥
Insert subscript	^	∧ over character
		e.g. s
Insert full stop	⊙	0
Insert comma	<u>^</u>	3
Insert single quotation marks	\$ \$	\$ \$
Insert double quotation marks	(₩
Insert hyphen	=	=
Start new paragraph	4	4
Transpose	ப	ப
Close up	linkingcharacters	
Insert or substitute space	#	#
between characters or words	'	'
Reduce space between characters or words	5	5