

Obesity: A Study of the Body in Popular Science Discourse

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by

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## ABSTRACT

### OBESITY: A STUDY OF THE BODY IN POPULAR SCIENCE DISCOURSE

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This thesis evaluates how the fat body is constructed in the popularizations of scientific obesity studies. This is accomplished through discourse analysis, including examination of the vocabulary used in describing the fat body and analysis of the narratives of causation- causes of obesity and consequences of obesity- in the news articles. This study found that the fat body is viewed as Other, an idea strengthened by the characteristics of popularizations as outlined by Fahnestock and Carosso, which increase the ability of the narratives to name causes and consequences of fat bodies. Furthermore, the portrayal of obesity as contagious demonizes the obese as bodies to be avoided. Finally, the deprivation of agency for the obese denies the fat body a voice and power within the circulating fatness debate.

## INTRODUCTION

When I first began working in the field of nutrition for a non-profit association, the topic of waist circumference and cardiovascular risk was on everyone's minds, as several health societies worked together to form a consensus statement. The obesity experts we worked with were revered, and thought of by their peers as cutting-edge researchers who were not only brilliant but truly wanted to help people. Generally that help meant advocating a message of 'move more, eat less.' It was some time before I questioned if that message was the right one for today's society. In order to help people who are obese, scientists and advocates cannot operate in a culture-free vacuum. Scientific facts can clash with cultural practices. The more I thought about what is ubiquitously termed a health 'disaster' in the nutrition world (obesity), the more questions I had about how obese people's bodies are viewed, what cultural meanings arise from the discourse surrounding obesity, and what effects this discourse has on overweight or obese people—including my friends, colleagues, and peers.

It is no exaggeration to say that every day there is writing published online or in print in English on the topic of obesity. The subject of obesity has, in fact, moved beyond being a topic confined to the United States—The World Health Organization has coined the term "globesity" to refer to the proliferation of obesity worldwide. As news stories on obesity arrive daily in inboxes, appear in subscription magazines, and form the basis for

blog posts, there is no doubt that obesity is a contentious, and politicized, issue. The U.S. government has hosted dozens of conferences on the topic. We are reminded of the statistics (which are debated) constantly. But how are these news stories constructing obesity and the obese? Everyone knows someone who considers himself or herself “fat.” (And here I am using the term preferred by those who work and conduct research in fat studies, a recognized field of scholarly inquiry (LeBesco 2004). The Popular Culture/American Cultural Association is hosting a national conference in 2010 in St. Louis with a fat studies track and the call for papers states that submitters should rethink the use of the words “obesity” or “overweight” unless used ironically). As obesity-focused research kept pouring out of the peer-reviewed journals my association publishes, I questioned if my fat friends and colleagues felt that the discourse that was circulating in both scientific and popular arenas was helping them or hurting them in a society where being fat is not accepted. I began to believe that media stories were contributing to the stigmatization of fat people, and wondered how that worked, what images/ideas were being most often presented, and what cultural norms were being addressed and changed in the discourse surrounding obesity. I do not think I am alone in considering these questions and desiring answers. From contemporary late night television shows such as “The Daily Show” to cover articles in *Time*, obesity is on the minds of journalists, and consequently in the minds of the millions of people who watch TV or read news magazines. If the images of obese people that accompany news reports (satiric or not) were not positive (and most I viewed were not), what message and meanings were being disseminated to the public? I saw no way that these images could

have a positive effect on people with low self-esteem or body disorders. It seemed likely that negative images reinforce negative opinions.

In noting the frequency of obesity-related stories in my daily source of news, *The Washington Post*, I thought that popular health and science stories were rich ground for studying how obesity is culturally created. Newspapers (both the print version and more so the online version) are one of the most accessible news sources, an inexpensive method for educating the public. The health and science news stories in newspapers can be found on the front page or in their respective sections, and the stories are frequently prompted by the publication of an important, groundbreaking scientific study. Journalists are typically given an embargoed copy of a newsworthy study in a top-ranked medical journal (such as *The New England Journal of Medicine*, *British Medical Journal*, *JAMA*, *Nature Medicine*, and *The Lancet*) and offered access to interview one or more of the study authors. The news reports of such scientific studies are called *popularizations*. Because scientific studies reach their largest general audience through reporting by the news media, it follows that to study the cultural construction of obesity, I should focus on print popularizations. Therefore, this study will examine the discursive construction of obesity in popularizations of scientific studies that address some aspect of obesity.



## LITERATURE REVIEW

The sources discussed here help clarify the following framework for this thesis: that meanings of obesity are shaped by culture, are accomplished via communication, and have consequences for obese bodies. To begin, the analysis of scientific popularizations of obesity and the cultural understandings they produce requires bridging rhetoric with sociological and cultural studies scholarship. A useful starting point is the concept of stigma. Stigmatization on the basis of obesity is well established in cultural and sociological scholarship (Rothblum 1992). In my initial searches, I quickly came across articles that examined the sociocultural context of women's body image and the stigma associated with women and men who are overweight. A proliferation of studies shows that cultural attitudes and discourses contribute to negative outcomes for obese people, including poor self-esteem, fewer job opportunities, and employment discrimination (Fikkan 2005; Rothblum 1992). Rothblum presents a comprehensive review of the literature on weight and social stigma, and she delineates a need for the obese to build a network of support to counteract the negativity. In particular, she highlights evidence that obese women become downwardly socially mobile because of their weight, and that obesity is frequently associated with lack of will power and laziness (1992). She also takes the somewhat controversial stance that the obese do not consume more calories than the non-obese. Finally, she argues that feminists should begin to understand obesity

as a form of oppression against women. It is interesting to note that a counterpart to this argument is issued in 2006, as Antronette Yancey, a physician, calls on feminist scholars to tackle the obesity epidemic with a mind toward affecting policy and public health changes (2006). After 14 years feminists are still being asked to make obesity one of their focal issues, a call that points to two potential realizations—that scholars in cultural studies and feminist studies have been perhaps too focused on disorders of the body, for example bulimia and anorexia; and that the desired results of multiple call to arms have yet to materialize.

Sociologists Saguy and Almeling looked at news reporting and the way it defines obesity as a social problem (2008). They analyzed how scientific and news media discussions of obesity assess blame for weight, and found that news articles moralize weight to a much greater degree than the science they are reporting on. Individual behavior modifications were addressed more often in their sample than policy solutions. Not surprisingly, they discovered that journalists are more likely to report on articles that lend themselves to dramatization than on those that do not. The ways in which obesity is framed by the media have also been examined. Lambert and colleagues (2007) found that obesity is framed socially as an environmental threat, financial crisis, a personal problem or undesirable condition, none of which have neutral or positive connotations. Lambert et al. issued a speculative guess as to why news magazines in this sample did not address the sociocultural problems of obesity, such as discrimination and low self-esteem: space and time were not provided. A weakness is that while their study illuminates differences

between how the media frame obesity and how society frames it, Lambert et al. do not provide any thoughts or speculations about the cultural impact of these frames.

A cultural approach to thinking about the body is detailed in *Unbearable Weight: Feminism, Western Culture and the Body*. Bordo (2003) asserts that the body is a medium of culture, a text that can be read as a culturally contingent category. By thinking of the body not as a biological form, but as a site of struggle, Bordo challenges assumptions about power. She describes the goal of cultural criticism (for her it is feminist) as “edification and understanding, enhanced *consciousness* of the power, complexity and *systemic* nature of culture, the interconnected webs of its functioning.” Applying this criticism to obesity rhetoric can help demystify how society’s conception of body is formed and the power struggles that take place within bodies. Bordo states that by bringing the marginal to the limelight, society can begin to understand what the exclusion of a group signifies and can challenge that exclusion. This ‘moving to the center’ is key in exposing a discourse that can be said to be changing our conception and experience of our bodies, as for example plastic surgery and bodybuilding have done.

Rothblum helped establish that stigma against obesity exists, and fat studies, the exploration of the social and political consequences of being fat, takes the next step in addressing stigmatization. ‘Fat studies’ is a burgeoning discipline whose literature offers a framework for the study of obesity rhetoric. (*The Fat Studies Reader*, released November 4, 2009, will offer an historical overview of fat studies and 53 essays on a range of fat topics). A chief problem that fat studies brings to light is the type of attention being given to obesity by the media, which is typically negative and derogatory, and

which contributes to the problem known as fat phobia. Gilman (2008) argues that obesity is treated as a form of ‘moral panic,’ defined by Stanley Cohen in 1970s as a threat to societal values and interests. Gilman, who writes for a popular readership, makes an historical point which is important to fat studies: the moral panic about fat, which leads to fat phobia, began in the 19<sup>th</sup> century and continues today. It has been a part of culture for an extended amount of time, and therefore will be difficult to transform.

One question found in the premise of fat studies that demands exploration is: can fat people, who are stigmatized and discriminated against, function as subversive agents? Kathleen LeBesco (2004) explores this possibility and chips away at the focus on bulimia/anorexia by focusing on fat as a political situation and a subversive act. In *Revolting Bodies? The Struggle to Redefine Fat Identity*, LeBesco is interested in the similarities and comparisons possible between fat identity and gender identity, and explores how social norms are situated on “culturally invisible fat bodies” (p. 7). Using examples from fat communities in cyberspace and in print, she shows the need for and benefits of moving the study of the fat body out of the dominion of biology and life sciences into the realm of sociocultural criticism. She identifies a trend in the academic literature of women and embodiment studies to focus on anorexia/bulimia and states that these trends in the literature “ignore the lessons to be learned by careful interpretive study of the narratives of other resistant subjectivities” (2004, p. 15). She also describes how cultural understanding of the body has differed throughout history and locale, showing that large body size was viewed as desirable in ancient cultures like Ice Age Europe, and continues to be desired in several non-Western locales including Polynesia.

If fat people, and fat women in particular, are to empower themselves, LeBesco states they must question why society benefits from their marginalization; they must also work to reconstruct fat so that it is not considered bad, dirty, or disgusting. One weakness in LeBesco's case is that her cultural examples very rarely feature men (although she states the project of resignification of fatness is vital to men too). Susan Bordo has written a book on male bodies (1999), but the male body is often missing in scholarship from the realm of fat studies. Ignoring the male body also ignores the fact that fat studies affect and concern both sexes.

The revolution alluded to in LeBesco's title is multi-faceted: fat people may be considered "revolting," but they should consider revolt against the larger social structure that keeps them subjugated, and they can alter the association of fatness with ugliness or disgust in a subversive revolt against cultural standards of beauty. If this can be accomplished, fat people can create a political identity and transform the meaning of fat body, much as queer theory has suggested that meanings of queer identity have been transformed by gay activists. In describing the two sides of fat identity, those who see it from a biological or social perspective, versus those who deny causal factors and focus on human actors creating meaning, LeBesco's foundation is communication, which she studies as the chief process by which identities are formed and narratives are constructed. By examining obesity in popular science writing, we can therefore see how obese identities are formed in one genre of communication.

The marginalization of the fat body is accomplished with great impact in medical and biological discourses, which naturalize the fat body's unhealthiness. One group that

finds itself at odds with the circulating medical dialogue is The National Association to Advance Fat Acceptance (NAAFA), founded 40 years ago. They are a non-profit civil rights organization dedicated to ending size discrimination in all of its forms. NAAFA wants to “build a society in which people of every size are accepted with dignity and equality in all aspects of life” (<http://www.naafa.org>). The group lists advocacy, public education, and support as the methods used to reach this goal.

The voice of the NAAFA movement conflicts with the medical community, which sees obesity as a health problem that can be defined through numbers; the medical/health sphere, according to many fat advocates, encourages demonization of fatness. The equating of fat with wrongdoing and abnormality is especially harmful to a younger generation, according to Paul Campos, author of *The Obesity Myth* who puts forth the idea that fat children are suffering from increased stigmatization because the government is excessively focused on talking about and demanding an end to childhood obesity.

According to NAAFA, fat Americans face discrimination in the workplace, but also in health care and education. The group supports litigation strategies that, according to Anna Kirkland, conflict with NAAFA’s goal of promoting size-acceptance (2003). These strategies hinge on showing that obesity is a disability when bringing lawsuits for wrongful termination or unfair hiring practices. Kirkland stated that “establishing obesity as a disability would contradict NAAFA’s identity concept by setting fatness apart from thinness or normalcy and acknowledging that it is an affliction rather than simply part of the variation of healthy bodies” (2003, p. 27). This contradiction has been a source of

debate and internal squabbling for NAAFA. The group strives to promote fat acceptance and body diversity on the one hand, but also wants height/weight to be added to federal anti-discrimination laws. Kirkland argued that such an addition to anti-discrimination laws would single out fatness as ‘Other’ and send a mixed message about the group’s purported goals. Kirkland’s case has met with resistance from disability scholars, who say their concern is to “dislodge disability from its origins in impairments” (Herndon, 2002, p. 122). Herndon has argued that excluding obese people from anti-discrimination legislation signifies the pervasiveness of fat phobia in the American culture, which is unwilling to accommodate larger bodies (2002, p. 124). She suggested that the cultural fear of allowing fatness to become protected as a disability under the Americans with Disabilities Act of 1990 is a dangerous fear, and is detrimental to society.

### **Popularizations**

As scientific studies reach general audiences chiefly through reporting in the news media, it follows that popularizations provide rich ground for study of obesity discourse. Popular science writing tries to create common ground between the reader and the science. The transformation of scientific facts into a piece of writing aimed at the general public is a process that has been analyzed by rhetoric and communication scholars, and there is strong agreement on the type of transformations that occur. Weaknesses found in popular science writing include: distortion of meaning, elimination of qualifiers, and a tone of finality although the original research was not conclusive (Carosso 1986). Similarly, Fahnestock found that popularizations transform tentative claims made by scientists into concrete facts, and overemphasize the practical applications of the original

research findings (1986). Fahnestock also alludes to the potential for sensationalization by showing that popularizations tend to overstate a finding's exceptionality within its particular field.

Two earlier pieces of scholarship about news reporting of science inform my study by outlining barriers to popular science writing and identifying weaknesses in the genre. Dunwoody and Ryan analyzed scientific barriers to the popularization of science in the mass media and discovered that scientists are not rewarded by peers for popularizing their research and that dissemination of their work is perceived to affect their chances for advancement (1985). The reason is that being a 'true' scientist is viewed as not needing the attention of the public. Dunwoody and Ryan point out that a *New England Journal of Medicine* stipulation exists in which research receiving "substantial attention from the medical trade publications or the popular media runs the risk of being rejected out of hand by the journal's editors" (1985, p.27). On the other side is the press and their duty to report news. Nelkin looked at how scientists use popular accounts for political and personal purposes (1987). She highlighted the time pressures faced by journalists, their vulnerability to their sources, and the problem with approaching science reporting without considering the social effects of research. Her overall argument was that pressures and constraints lead journalists to 'sell' science, rather than investigate it.

Looking at the popular media's role in the sub-category of cancer dialogue and knowledge distribution offers insight to my study. Yadlon (1997) showed that breast cancer discourse performs cultural work, as discussions within that discourse coalesce with a rhetoric of culpability, resulting in distraction from the need for further



investigation into the science of cancer and blaming of the affected woman. Yadlon's analysis provides a useful parallel to obesity rhetoric by showing how one body-related discourse shapes cultural understandings, and reminding us that knowledge production can never be viewed as neutral.

As this literature review shows, cultural discourse has consequences for obese bodies, including stigmatization and marginalization. There is a need, however, for deeper examination of what cultural meanings are being created within the genre of popularizations, and how this wide-reaching genre constructs obese identities. This study will address that need, and seeks to shed light on the role popularizations play in constructing narratives of obesity.

### **Focused Research Questions**

The questions I will address in this study are these:

1. What are the cultural meanings of obesity that arise from recent popularizations of scientific studies on obesity?
  - a. How are obese identities and narratives constructed? Are the obese agents and/or victims of their bodies? What are the causes of and consequences of obesity?
  - b. What metaphors are invoked in describing obesity in these popularizations?
  - c. If popularizations sensationalize and overstate study findings and implications, does it happen here? What are the consequences?
2. What are the specifics of marginalization as it occurs in these popularizations?
3. What cultural norms are invoked and possibly changed?

## Methods

To address these questions, I will conduct a discourse analysis of scientific popularizations. First I defined a set of original scientific research articles. I narrowed the journal selections to three years: 1999, 2003 and 2007, because they were equally spaced, fairly recent, and were years with extensive coverage of obesity news. I selected three obesity studies from peer-reviewed scientific journals published in the last decade that received a great amount of coverage by the popular press in large-circulation newspapers and magazines (a total of 505 citations). The studies are:

- Mokdad, A, Serdula, M.K., Dietz, W.H., Bowman, B.A., Marks, J.S., & Koplan, J.P. (1999). The spread of the obesity epidemic in the United States, 1991-1998. *Journal of American Medical Association*, 282, 1519-1522.
- Calle, E.E., Rodriguez, C., Walker-Thurmond, K., & Thun, M.J. (2003). Overweight, obesity, and mortality from cancer in a prospectively studied cohort of U.S. adults. *New England Journal of Medicine*, 348(17), 1625-1638.
- Christakis, N.A., & Fowler, J.H. (2007). The spread of obesity in a large social network over 32 years. *New England Journal of Medicine*, 357(4), 370-379.

Mokdad et al. used a random-digit phone survey to study trends in data on the prevalence of obesity. They found that the prevalence of obesity rose 5.9% from 1991 to 1998, with a steady increase in all states, sexes, age groups, races, and education levels. This study was a follow-up to previous data that looked at the time periods 1976-1980 and 1988-1994. The authors call for making weight reduction a public health priority.

Calle and her coauthors looked at more than 900,000 U.S. adults who were free of cancer in 1982 and compared their cancer rates in 1998. The findings were that the heaviest members of the population studied had death rates from all cancers combined that were 52% higher for men and 62% higher for women than rates in men and women

of weight defined as normal. The authors estimate that patterns of obesity could account for 14% of all deaths from cancer in men, and 20% of deaths in women.

The Christakis and Fowler study evaluated the social network of 12,067 people who participated in the Framingham Heart Study, which began in 1948. Using the body-mass index to define obesity, they used statistical models to examine whether weight gain in one person was associated with weight gain in friends, siblings, spouses or neighbors. The authors concluded that obesity appears to spread through social ties, and that persons of the same sex had relatively greater influence on each other than the opposite sex did.

A search for the keyword “obesity” in LexisNexis Academic resulted in 991 news stories since 1997 that contained the term. In order to narrow the popularizations, I set a 3-day period of news coverage starting one day before the peer-reviewed study was published. Front-page newspaper articles were preferred because of their high impact and visibility. Where I had choices in selecting popularizations, I eliminated those that were fewer than 500 words, and were not in the front section of the paper. I made the decision to analyze 12 popularizations (see Appendix) instead of the entire corpus of nearly 1,000 because the goal of this study is detailed analysis; these are the most important popularizations from their years, allowing me to give each one a close, detailed reading.

The four popularizations linked to each scientific study appeared in newspapers and wire services with wide daily circulations, which are approximately defined here:

*Wall Street Journal* (2.1 million), *USA Today* (2 million), *The Washington Post* (673,000), *The Boston Globe* (350,000), and *The Philadelphia Inquirer* (300,000).

The analytical tools to be used will examine with what terms the fat body is named; whether and how fat identities are constructed in popularizations, and whether they are given agency; how and with what categories causation for the fat body is constructed; and what the cultural consequences of these constructions are.

Evaluating how the fat body is constructed, whether it is Othered, and whether it is denied or given power in the popularizations of obesity studies can be accomplished through discourse analysis. Starting by examining the vocabulary used in describing the fat body, we can interpret how fat is viewed in relation to normal. Analysis of the narratives of causation- causes of obesity and consequences of obesity- in the news articles shows the fat body is constructed as a problem to be solved. The consequences of obesity named in the narratives, their severity and implications, act to define the fat body as abnormal. It is also evident that the fat body is viewed as Other, an idea strengthened by the characteristics of popularizations as outlined by Fahnestock and Carosso, which increase the ability of the narratives to name causes and consequences of fat bodies. Furthermore, the portrayal of obesity as contagious demonizes the obese as bodies to be avoided. Finally, the deprivation of agency for the obese denies the fat body a voice and power within the circulating fatness debate, a place where LeBesco said the fat body must act to redefine its identity.

## ANALYSIS AND DISCUSSION

### **Naming the Fat Body**

In reviewing the selected scientific popularizations, it is evident that each one uses different vocabulary to describe obesity. The type of terms used may function in the popularizations to construct the fat body as ‘Other.’ The naming of the fat body is one method that should be examined as making obesity an objective, scientific medical condition rather than a subjective, cultural category. LeBesco addressed the problem of terminology, concluding that “what is most important is to continue to question our assumptions about the terms that discursively make or break bodies and to recognize that there is never a neat separation between the power we promote and that which we oppose” (2004, p.124). We must recognize that all descriptive terms carry cultural weight, especially supposedly unbiased ones.

The quality of being ‘overweight’ is described using several words. The most common is *obese*, used more than twenty-four times in the selected sample of twelve popularizations as outlined in the Methods. Some examples are:

“A BMI of 30 or more is considered obese” (Faubert 1999)

“Obese men had an increased risk of death from cancer of the stomach”  
(Hellmich 2003)

“Transmitting an increased risk of becoming obese from wives to husbands” (Stein 2007)

“Obese people are, in general, more difficult to diagnose with cancer” (Mishra 2003)

*Overweight* is used fifteen times. Several examples are:

“Go from being overweight to obese” (Fox 2007)

“People with a BMI of between 25 and 29.9 are considered overweight” (Winslow 1999)

“Overweight men had an increased risk of death” (Hellmich 2003)

Other terms used, in order of frequency, are: *fat*, *heavy*, *hefty*, *large*, and *fatness*. Some representative examples include:

Americans are getting fatter and fatter (Hsu 1999)

Americans are heavy and getting heavier (Hellmich 1999)

The heftiest men are at 34 percent higher risk of dying from prostate cancer (Uhlman 2003)

Large women face up to a 62 percent greater chance of dying (Uhlman 2003)

Friends affected each others’ perception of fatness (Kolata 2007)

The use of *hefty* and *fat* stand out because the popularizations tend to use what seem at first reading to be neutral terms--such as *obese* or *overweight*. However, scholars such as LeBesco would argue that *obese* is not a neutral term, but has power. Terms that appear neutral because of frequency and tradition have power inherent to their usage. In these

popularizations, the term *obese* functions to categorize the scientifically-defined, obese body as Other. By defining obesity through numerical measurements, the popularizations construct the body through objective and medical parameters, not allowing obesity to be a subjective, culturally-constructed category, a site of struggle, as Susan Bordo suggested it must be read: “The body—what we eat, how we dress, the daily rituals through which we attend to the body—is a medium of culture” (2003, p. 165).

Obesity is also referred to in the popularizations as the opposite of normal- for example, the opposite of a normal BMI, weight, or body fat percentage. In this example: “Obesity is defined as 30 or more pounds over a healthy weight; a normal BMI is 19 to 24.9,” the contrast between normal and Other is made explicit, with Other linked to objective qualities that define it as unhealthy. In the sentence “Those who were overweight or obese or over were all compared to the normal group,” the distinction is again spelled out by opposing normal and obese. Because the obese body does not fit medical society’s view of normal, it is constructed as scientifically abnormal in the popularizations. This spills over into cultural terms, Othering the fat body with great effectiveness. LeBesco explained that, “As one who transgresses boundaries, the fat individual represents an existence that allows for the continued damaging construction of fat people as dangerous or bad” (2004, p.25). By overstepping both physical and cultural boundaries, the fat body is not seen as part of the norm. The terms used in naming the fat body polarize obese and normal, and serve to Other the fat body as unhealthy.

**Narratives of Causation: What causes obesity?**

Each of the popularizations names at least one time a cause of obesity in American society. The specific features of a discourse to look for when identifying causation are words or phrases that outright declare, suggest, or hint about the cause being addressed. In the narratives selected here, causation is tied to what is defined as a medical condition or illness. By naming the causes of obesity, the narratives establish obesity as a problem from the start. The popularizations name various types of causes, from broad to specific, including environment, society, schools, physicians, genetics, or friends.

Overall, I identified 30 statements among the popularizations that constructed or suggested causation. One type of statement implied how to solve the problem of obesity. Within this type the following causes are located: physicians, culture, environment, workplace, schools and access to high calorie foods.

Another type of statement named genetics as a cause of obesity. An example is: “But genes can make some people more susceptible to obesity, Koplan says.” Another example is: “There is a strong genetic component at work, too. Science has shown that individuals have genetically determined ranges of weights, spanning perhaps 30 or so pounds for each person” (Kolata 2007). Causation is placed within the body, but also turns the body into its own enemy. This assignment of power is fracturing to self, as it gives the individual body the blame for something that is not within its own physical power to change.

Finally, six statements suggested that friends or spouses could increase the risk of obesity: “When one person gains weight, close friends tend to gain weight” states that



causation is articulated through a person who is a friend or loved one (Kolata 2007). The original study by Christakis & Fowler stated, “weight gain in one person might influence weight gain in others.” The wording distinction is noteworthy, as the original provides more hedging through use of “might,” a change which Fahnestock identified as an accommodation of science (1986). In another example: “They found that if someone’s friend becomes obese, that person’s chances of becoming obese increases by more than half” causation is placed on friends. Here causation is placed on a spouse: “When people became obese, the risk of their spouses becoming obese over the next two to four years increases by 37%.”

### **“Solving” the Problem**

Within the narratives of causation is the construction of obesity as a problem to be diagnosed and remedied. Generally there was a tremendous avoidance of individual agency in the popularizations, which shifted causation away from the obese person and toward the culture, friends, or other factors. This avoidance of individual agency runs counter to the study done by Saguy and Almeling (2008) who found that individual behavior modifications were addressed frequently in a sample of popularizations. Under this theme of ‘solving the problem’ of obesity, several examples can be analyzed. *The Boston Globe* (Hsu 1999) article states that scientists see obesity as a health crisis and one way to change the direction of the nation’s weight gain is “to focus on how physicians take care of their own diets. There are still lots of grand rounds that serve doughnuts.” The structure created makes the physicians agents who could stem the

problem. Further, the language indicates that physicians' power could have an effect on their patients greater than the individual patient's will.

Another example identifies schools as a cause: "Schools in particular need to teach young people about healthy eating habits" (Winslow 1999). Thus schools will help students solve the problem. Another example combines schools and workplace: "Schools, communities and work sites need to provide more opportunities for people to get exercise." And another popularization points to "a reduction in physical education classes" as causation for increased obesity.

Besides pointing to the role of physicians and schools in obesity, several of the popularizations placed causation for obesity onto the more distributed concept of the social environment. One newspaper article said, "I think there's a great risk here in blaming obese people even more for things that are caused by a terrible environment" (Kolata 2007). From this, we can extrapolate that obese people have no agency or causation. This quote also alludes to the danger inherent in promulgating the stigma of obese people as lazy and unwilling to change. The sentence "Our current environment and lifestyle discourage us from physical activity, and they encourage us to eat food high in calories and fat" (Winslow 1999) is another example that shifts causation away from the individual and distributes it to environment and lifestyle, adding to the construction of obesity as a problem whose causes need to be identified.

The idea of the culture, not the individual, being the cause for obesity is repeated in an *Associated Press* article: "We've developed a culture where you have to work really hard to eat right and exercise. We're kind of stacking the deck against ourselves"

(McConnaughey 2003). And later: “Until we accept that it is a bigger problem than one of individual discipline, we probably won’t be too successful in turning it around.” By moving accountability to the culture as a whole, the language denotes that the individual cannot overcome what the culture has produced-- the group is put in the position of power. Individuals have no tangible power against the whole. To further this idea, the journalist for example refers to “the nation’s bulging waistline,” reinforcing it as a group problem, not an individual one (Winslow 1999).

Deflection of causation to the culture makes the ‘problem’ of obesity larger and more distributed than the other examples in which physicians and schools play a role in obesity’s causation. In all of these examples, the fat body is not constructed as responsible for its size, a change noted by Gilman, who wrote that in the past, one’s eating habits were pointed to as responsible for having a fat body. Those who were healthy had control of their eating habits; those who were out of control were savages (2008, p. 165). Gilman also shows that developed nations are spreading obesity to the rest of the world, and that to “solve” globesity, or the global spread of obesity, the world must return to older eating practices.

The narratives of causation discussed above are intensified by the characteristics of popularizations that Fahnestock and Carosso identify. The use of absolute statements in popularizations when the original scientific article is cautious is one way this genre affects causation. In this news example: “Surprisingly, researchers found that the obesity risk is not affected by geographic distance,” (Hellmich 2007) the meaning is twisted and causation misstated. The original article said that, “social distance plays a stronger role

than geographic distance” (Christakis 2007). The leading news story sentence “Obesity is contagious” (Hellmich 2007) is another instance of an absolute statement that has been altered from the original scientific context, which stated that “obesity appears to spread through social ties.” The headline from Reuters in 2007 (Fox): “Your best friend can make you fat: researchers” is an example of sensationalizing the conclusion of the original study, which found that “the spread of obesity in social networks appears to be a factor in the obesity epidemic.” These examples show that the features of popularizations help strengthen the narratives of causation.

### **Narratives of Causation: What obesity causes**

Several of the news stories state that obesity causes other problems, all of which act to medicalize the fat body. The consequences of obesity as described in the popularizations are: increased risk for other diseases, dying from cancer, and affecting others’ weight gain. In this example:

The study found links between obesity and eight cancers... With obesity already to blame for elevated risks for heart disease, diabetes, and stroke, specialists said the new results add yet another compelling reason to urge Americans - about 30% are obese, according to studies - to take up healthier lifestyles (Mishra 2003)

obesity’s consequences are multiplied to include many other medical conditions.

Similarly in this sentence: “They raise disturbing prospects that the nation faces an ever-increasing prevalence of diabetes, cardiovascular disease and other health problems associated with being fat,” obesity is named as a cause of other health problems.

By detailing the consequences of obesity as frightening, the fat body is Othered through invocation of phobia. In the example, “Study says fat causes 90,000 U.S. cancer deaths every year” (McConnaughey 2003) the author identifies what is called an

“irrefutable” link between obesity and cancer and works through the convention of fat phobia to convince readers that obesity is dangerous and frightening. The obese person is not given room to speak or respond to this data in the article. “Excess weight may account for 14 percent of all cancer deaths in men and 20 percent of those in women” also points to obesity as a cause of death from cancer. Other statements expand the consequences of obesity to a higher amount: “Obesity contributes to about 300,000 deaths a year.” That number is increased here: “Researchers say they are stunned at how fast Americans are adding extra pounds, and some say that obesity- which perhaps kills as many as 325,000 every year- should be considered a real public health problem and not simply a cosmetic one.” This example contains several narratives of causation. First, obesity is credited with a high number of deaths, and second it is made into a problem that demands medical attention. The fat body is named as not just a superficially ugly body, but one that is diseased and thus made Other.

Otherness is a source of fear that the articles exploit. The tone describing the link between obesity and cancer is alarmist—one expert said: “Maybe cancer is a more scary disease to people, maybe this will be a persuasive message” (Mishra 2003). The fear created in this passage is a common thread in several popularizations addressing obesity and cancer: “Being fat significantly increases the chances of dying from all sorts of cancers” and listing all the cancer types that are linked to excess weight: “cervix, ovary, multiple myeloma, non-Hodgkins lymphoma, pancreas, liver, and in men, the stomach and prostate.” The fat body is constructed as teeming with disease and a source of societal problems. LeBesco called attention to the number of diseases associated with

fatness, stating that fatness is portrayed this way so that the health/fitness product industries can have a growing market (2004, p.58).

Another consequence of being fat in these narratives is increasing the weight of friends and family, as shown in several excerpts from the 2007 popularizations:

When one person gains weight, close friends tend to gain weight too.

If someone's friend becomes obese, that person's chances of becoming obese increase by more than half.

Each person who became obese was likely to drag along some friends.

Within the narratives describing the consequences of obesity are overstatement and sensationalizing of scientific results. For instance, the statement "The number of adult Americans considered obese soared nearly 50% during the 1990s to 17.9% of the population," the wording is sensationalized to make the increase seem larger than the actual rise from 12% to 17.9% of the population. Naming a 5.9% increase is less sensational and attention-catching than saying "soared nearly 50%." Another way sensationalism occurs in the popularizations is through reduction of uncertainty. The removal of hedging is used to eliminate any doubt of the statistic's significance, a change which Fahnestock said could result in misunderstandings that "are far from benign" (1986, p.285). In the example: "Overall, the study, published in today's New England Journal of Medicine, found that excess weight accounts for 14 percent of all US male cancer deaths and 20 percent of female cancer deaths," the caution displayed in the original, which said, "could account" for these deaths, has been replaced by certainty. In an effort to minimize what Carosso called "restrictions that accompany the often

ambiguous conclusions of research,” (1986, p. 463), the journalist has exaggerated the potential for death that obesity carries. The headlines also use sensation to convey a threat to society: “Study says risk of cancer death higher for obese people; as weights soar, specialists predict a rise in fatalities” (Mishra 2003) and “Being overweight linked to dying of cancer” (Hellmich 2003).

Describing the consequences of the fat body as fearful and deadly further positions those who are obese as outcasts, and as a danger to ‘normal’ bodies. The popularizations’ sensationalism and medicalizing contribute to the fat body’s Otherness by making the body what Bordo called “a passive tablet on which disorder is inscribed” (2003, p.67).

### **The Fat Epidemic: Obesity as the enemy, obesity as contagious**

Metaphor is a commonly used method by science writers to present complicated information in a more easily understood manner (Dowdey 1987). The idea that obesity is something to be fought against, an enemy, is a thread found throughout these popularizations. The war metaphors found here see obesity as a combatant, an attacking presence and a force that must be repelled. For example, the phrases “ammunition in their fight against obesity” (Uhlman 2003) and “magic bullet” (Hsu 1999) suggest the need for violence to defend against obesity. According to Saguy and Almeling, although the news media look to the scientific studies and note the level of urgency when it comes to representing obesity as a crisis, the media also “throw fat on the fire by using, more than the scientific studies words like ‘epidemic’ or ‘war’ ” (2008, p. 64). The militaristic tone and supernatural phrase “magic bullet” place obesity epidemic in two realms- both reality

and fantasy, a dichotomy that reflects the conflicting messages emerging from the discourse about how to solve the ‘problem’ of obesity. Do we need a military solution (with describable steps) or a metaphorical solution? Medical or societal solutions?

In addition to the metaphor invoking a war against obesity, there is a prevailing use of language that describes obesity as a contagion. Words like “spread,” “drag,” “contagious,” and “ripple effect” are associated with contagion, which by definition refers to a disease. The language defines obesity’s increasing negative effects through the metaphor of a viral contagion. Although obesity cannot be transferred from person to person like influenza, it is written about as a virus-like entity that is overtaking society, causing a growing number of deaths, and inflicting devastation nationwide. Examples of this language can be found in every popularization. Several journalists used the simile “like a virus” to describe obesity’s spread in social circles (Stein 2007, Fox 2007, Kolata 2007).

Other phrases add support to the idea that obesity is a dangerous contagion. The casualties of the obesity epidemic are frequently referenced: toll the epidemic has taken on nation’s health (Fauber 1999), calculate its toll (Winslow 1999), obesity contributes to 300,000 deaths/year (Hellmich 1999), health care system will increasingly be overwhelmed (Fauber 1999). The nation is at risk for devastation, as obesity has “swept the nation” (Fauber 1999) and we must make a healthy weight “a national priority now” (Hellmich 2003). The fearful tone of a nationwide, deadly contagion contributes to fat phobia, a cultural concept created long ago and still circulating today, which Gilman



identified as incorporating a moral panic against obesity, which is seen as a threat to societal values and interests (2008, p.9).

The contagion metaphor is important to recognize and deconstruct because the rhetoric that emerges about any disease and its spread have consequences. Broadly speaking, popularizations can promote or mitigate the stigmatization of individuals, groups, behaviors, and lifestyles. What if fear that obesity is contagious caused people to keep others at a distance, including friends and family? Should a thin person avoid befriending an obese person out of fear of becoming fat?

The message of contagion is one of fear and helplessness, and obesity is put forth as dangerous to others. In *USA Today*, Hellmich (2007) applied this subheading to her front-page story: 'Study: Peers affect ideas on fat and thin.' This is the underlying assumption in taking a cultural view of obesity, and the popularization is extending the cultural construction into a social situation of alarm, fear, and misunderstanding. This is enhanced by other phrases, such as the "obesity risk is not affected by geographic distance," so that a person who lives thousands of miles away could affect one's weight. This makes the contagion mobile and far-reaching, reducing the power of the individual to stop it. The understanding—even when weakly denied in print, as in, "people should not sever friendships with friends who have gained weight"—is that obese people should be avoided, because they have influence over dozens of other people's weight. The social network that can transmit "an increased risk of becoming obese from wives to husbands" has implications for society and the family unit, and undoubtedly the fear of transmission adds one more element to the stigma of being fat. The interpretation of this rhetoric is a

warning against having an obese person in your social network. In constructing the concept that obese people are contagious entities, it follows that they should be avoided. With such a risk defined, people are thus less likely to choose to befriend, marry, or collaborate with an obese person. This is an example of the societal demonization of the obese, and adds to their treatment as Other.

The emerging metaphor of contagion is not just a literary device with limited impact. Emily Martin describes in her book *Flexible Bodies* that she is troubled by the thoroughness with which the new cultural thinking about the immune system has seeped into society (Martin, 1994, p. 247). This is because of disturbing implications, namely that such thinking encourages a new form of social Darwinism, which adversely affects the disadvantaged, such as those who do not have the flexibility to fight disease or, in a broader social sense, people who cannot be nimble and flexible in the workplace. In comparison, the emergent view of obesity as a contagion, a virus, a public health menace and a society-wide affliction has impact on the wider cultural understandings of obese bodies. One example is that anti-fat sentiment is often accompanied by racist and classist misconceptions, biases which contribute to the stigma of obese people being lower class and uneducated, and reinforcing idea that obesity is a problem only for minorities, not the white, dominant social class (LeBesco, 2004, p. 59). The view of obesity as a contagion has implanted the fear that this “minority, other class” problem could enter the dominant social sphere (and we know obesity affects all classes and races). Without the dominant class advocating for obese people, however, the struggle for acceptance remains. Behind the messages from physicians, journalists, and anti-obesity advocates, who say that the

obesity contagion spreads from friend to friend, kills 90,000 people a year, and is rippling throughout all levels of society, is the fear of becoming ‘Other.’

The process of disempowerment begins with the first person who “spreads” the contagion (who by default must be obese/infected by ‘obesity’). Although this actor is never named or clarified in the discourse, the concept of contagion requires its presence. The dichotomy of self in which the individual is innately responsible, yet the implied causation for the person’s obesity is shifted to others, causes confusion over the contagion concept—is it a real disease? Are fat people truly contagious? The implied initiator of the contagion, who is obese, combined with the virus-like spread of obesity that is warned about in the popular writing, provide more faulty ‘rationales’ for the oppression of the obese. The implication is that the struggle to reinvent the fat body as ‘normal’ and re-appropriate fat as ‘worthy’ are societal and cultural improvements that are unlikely to occur.

### **The Fat Body’s Agency Over its Own Person**

The use of passive grammatical constructions in the popularizations presents the fat person as acted-upon rather than an agent of action. In these constructions, agency of the fat person is reduced or removed entirely. In the example, “The percentages of obesity in the population were obtained from telephone surveys of more than 100,000 people” the statistic reduces the agency of the people called.

Another example where syntax reduces the fat person’s agency occurs through use of a vague subject. Obese people are not given agency or subject position, which is a societal trend identified by LeBesco (2004) and other scholars (Gilman 2008; Oliver

2005). “If someone you care about gains weight, your notion of an acceptable body size may change.” If the ‘someone’ is a wife or brother, that term would more clearly define her/his agency. In a similar example, “She said it reinforces the idea of encouraging people to diet and exercise in groups or with a friend,” *people* could be more clearly defined as obese or overweight people. Murky agency is used to avoid making the fat person fully agentive. For example, in the sentence “They also may avoid regular doctor’s visits,” the antecedent (obese patients) appears a full paragraph earlier.

Another example of vague agency is: “But they don’t realize if they can just spend an extra few minutes each day, and as little as 200 calories less a day” (Hsu 1999). “They” is never defined. This lack of clear referent is an instance of denying the authority of one’s experience, a problem Bordo identified among Victorian-era women with anorexia, who were not given space or authority to make decisions inside their home, so instead focused on controlling their own bodies to the extreme of not eating (2003). By not giving “they,” the obese people, the power to be identified and labeled, this language puts the obese into a liminal position. The passivizing of agency is another illustration of how the language in these popularizations treats obese people as ‘Other’ and denies them space and voice in the fatness debate.

Use of passive voice is another effective method for depriving agency. “More TV watching by children” is listed as a cause of obesity (Fauber 1999). A more active syntax would have been ‘children are watching more TV.’ This sentence uses passive voice to reduce agency of the group. In the excerpt: “Things that are caused by a terrible environment” is another instance of passivizing the agent and ambiguous agency; the

things caused by environment, which are not named, are obesity and the related diseases as outlined in the popularizations.

As individuals do not act as the agents, obesity becomes the subject of many sentences. For example, in these phrases “with obesity already to blame for elevated risks for heart disease, diabetes, and stroke” (Mishra 2003) and “obesity also makes cancer harder to diagnose” (McConnaughey 2003), the subject is clearly obesity, which is named and made active. Obesity can also serve as the object of attack: “This study...emphasizes the reason why obesity needs to be targeted as a major health problem in the United States” (Uhlman 2003).

Two of the sample popularizations assigned the obese/overweight person agency. In describing the *New England Journal of Medicine* study (Christakis & Fowler 2007) which found that the spread of obesity in social networks appears to be a factor in the obesity epidemic, *The New York Times* news article stated that “each person who became obese was likely to drag along some friends” (Kolata 2007), denoting agency for causing friends or family to gain weight. In *The Boston Globe* article the phrase: “people are simply eating more (Hsu 1999),” assigns causation for society’s increased weight gain to people. Assigning ‘people’ agency is unusual among the samples, which places causation for obesity more often upon society, environment, physicians, or genetics, rather than individual human agents.

### **Depriving the fat body of agency over its body**

The removal of agency in the popularizations deprives the fat body of agency over its body. The fat body is not given the ability “to speak for the self in a meaningful

and powerful way” (Bordo, 2003, p. 67). The lack of agency given to the fat body is tantamount to disempowerment and deepens the potential for the continued stigmatization of a marginal group through confiscation of power. Denial of agency also thwarts the efforts of those who seek to help fat bodies mobilize against the medicalization and stigmatization of their bodies.

Because obese people do not belong to the category of normal or mainstream culture, they have not historically joined together in political activism. This is changing as NAAFA and fat scholars become vocal in their demand for agency and have mobilized through websites, blogs, conferences, and Fat zines (LeBesco, 2004, p. 43). The denial of agency in the popularizations, however, smothers the possibility of mobilization by not allowing the fat body to have space in the debate. Political strategies to counter fat discrimination must struggle against this lack of space for the fat body. In addition, there has been disagreement within the fat cause. For example, NAAFA’s arguing that obesity should be classified as a disabling disease does not align with their mission, according to Kirkland in her 2003 study on pro-fat advocacy. Kirkland presented a valid counterpoint to NAAFA’s support of litigation that argues for making obesity a disability, stating that “Establishing obesity as a disability would contradict NAAFA’s identity concept by setting fatness apart from thinness or normalcy and acknowledging that it is an affliction rather than simply part of the variation of healthy bodies” (2003, p. 27). Reduced agency also works to further hinder the fat body from becoming a member of the dominant socioeconomic class, which LeBesco highlighted: “fatness marks one as a failure at

attaining citizenship in the dominant socioeconomic class” (2004, p.58). Without agency in the debate, the fat body can never fight the norms established by the ruling class.

Struggles for power are visible throughout the popularizations, and are working to shape society’s understandings of obesity. The messages emerging are: fat is frightening, fat people should be avoided; fat people have no power and they cannot be effective social and political agents; children are not responsible for their weight, other parts of society are; fat people are victims of something the environment created; and fat is causing more people to die from cancer and other diseases. The cultural meanings strengthen an existing issue as the rhetoric denies the fat body a voice and space for discussion and action, which is a form of subjugation that Bordo (2003) showed has symbolic and political meaning. Denying a group of people voice, based on their Otherness and embodiment as abnormal, is discrimination, and further pushes that group’s existence to the margins. The denial of agency enforces the idea that ‘fat is now and forever bad,’ a cultural construct that LeBesco said must be fought through fat challenges, the first step of which is a “highly political act with subversive cultural consequence” (2004, p. 53).

We must also be aware that naming causation on the individual is not the needed response, as it has its own complications. Other disease-related discourses have functioned to shift agency to the patient with negative consequences. One example is breast cancer discourse, which was found to employ a rhetoric of culpability where the woman was named as responsible for her cancer, via her poor diet and reproductive decisions (Yadlon 1997).

## CONCLUSION

“Obesity is the terror within. Unless we do something about it, the magnitude of the dilemma will dwarf 9-11 or any other terrorist attempt.”—Richard Carmona, former U.S. Surgeon General

“The war on fat is unique in American history in that it represents the first concerted attempt to transform the vast majority of the nation’s citizens into social pariahs, to be pitied and scorned until weapons of mass destruction can be found that will rid them of their shameful condition.”—Paul F. Campos, author of *The Obesity Myth*

In light of the literature review, it is not unexpected that fat bodies are constructed as threats to societal values in the popularizations examined here. In analyzing the meanings accomplished in this genre, it is also apparent that fat bodies are Othered and stripped of power. The terms used in naming the fat body situate obese opposite from normal, and construe the fat body as an objective, unhealthy body. LeBesco said that in order to redefine fat identity, society must not allow “biological determinism” to exist unbridled (2004, p.9), and should remain “engaged in language games about fat to stave off the threats” (2004, p.123). The reporting performed by the news media is certainly a language game. Naming the causes of obesity in news articles works to frame the fat body as a medical problem to be solved. The deadly consequences of obesity named in



the narratives- compounded illness and fatal disease- make the fat body fearsome and medicalized. Adding to the Othering of the fat body are the characteristics of the popularization genre- overstatement of findings, reduced hedging, and elimination of ambiguity- which help intensify the ability of the narratives to name causation for and consequences of fat bodies. Fahnestock warned against the potential for dangerous misunderstandings when science accommodators go too far in hyping and/or misstating scientific results. The fear surrounding the findings about the increase in obesity rates and the connection with cancer could be such a danger, by creating misconstrued cultural ideas about fat. The portrayal of obesity as contagious demonizes the obese as bodies to be avoided, banishing them to an inferior, marginalized position, and allowing conception of obese bodies to continue in the established direction of bad, fearful, and unpopular. The removal of agency from the obese lends support to the idea that obese people are powerless, and that the fat body should not be given a voice in the fatness debate. The idea that ‘fat is now and forever bad,’ a cultural construct that LeBesco said must be opposed, persists in these findings.

It is important to acknowledge the consequences of naturalizing the fat body’s unhealthiness. The literature review shows that the body is a site of struggle, and in the texts selected here, the struggle is dominated by science accommodators, who are making the obese into Other. This study finds that by linking the fat body to societal problems, some of which are deadly, popular articles deny fat bodies space and power to become a normal, agentive part of culture. This sets the fat body in a passive position, waiting to be given responsibility. Deprivation of agency also affects what options are available for the

fat to mobilize. Without the cultural nod toward their agency, the fat have few opportunities for their desires and goals to be taken seriously.

Discourses have the power to gradually change conception of our bodies, according to Bordo (2003). If popular constructions of obesity are not working to question society's views of what bodies are acceptable or supporting an alternate idea of what can be defined as normal, conception of the obese body as 'Other' will not change. It remains crucial for sociocultural and rhetoric scholars to continue to look at how contemporary discourse is marginalizing the fat body, especially within the genre of popularizations, as they have a much broader reach than medical journals.

## APPENDIX I: ORIGINAL SCIENTIFIC STUDIES

Mokdad, A, Serdula, M.K., Dietz, W.H., Bowman, B.A., Marks, J.S., & Koplan, J.P.

(1999). The spread of the obesity epidemic in the United States,

1991-1998. *Journal of American Medical Association*, 282, 1519-1522.

Calle, E.E., Rodriguez, C., Walker-Thurmond, K., & Thun, M.J. (2003).

Overweight, obesity, and mortality from cancer in a prospectively studied cohort

of U.S. adults. *New England Journal of Medicine*, 348(17), 1625-1638.

Christakis, N., & Fowler, J. (2007). The spread of obesity in a large social

network over 32 years. *New England Journal of Medicine*, 357(4), 370-379.

## APPENDIX II: POPULARIZATIONS OF ORIGINAL ARTICLES

### I. *The Spread of the Obesity Epidemic in the United States, 1991-1998*

Fauber, J. (1999, October 27). Obesity epidemic sweeping nation. *Milwaukee Journal Sentinel*, p.1A.

Hellmich, N. (1999, October 27). All signs point to an epidemic of obesity. *USA Today*, p. 1D.

Hsu, K. (1999, October 27). As US obesity rises, scientists see health crisis. *Boston Globe*, p. A3.

Winslow, R. (1999, October 27). Number of overweight Americans surges in an epidemic of obesity. *Wall Street Journal*, p. B4.

### II. *Overweight, Obesity, and Mortality from Cancer in a Prospectively Studied Cohort of U. S. Adults*

Hellmich, N. (2003, April 24). Being overweight linked to dying of cancer. *USA Today*, p. 1A.

McConnaughey, J. (2003, April 25). Study says fat causes 90,000 US cancer deaths every year. *Associated Press*.

Mishra, R. (2003, April 24). Study says risk of cancer death higher for obese people as weights soar; specialists predict rise in fatalities. *Boston Globe*, p. A3.

Uhlman, M. (2003, April 24). Obesity makes cancer riskier. *Philadelphia Inquirer*, p. A1.

### III. *The Spread of Obesity in a Large Social Network Over 32 Years*

Fox, M. (2007, July 25). Your best friend can make you fat: Researchers. *Reuters*.

Hellmich, N. (2007, July 26). Obesity can run in social circles; study: peers affect ideas on fat and thin. *USA Today*: p. A1.

Kolata, G. (2007, July 26). Find yourself packing it on? look around at your friends. *New York Times*, p. A1.

Stein, R. (2007, July 26). Obesity spreads in social circles as trends do, study indicates. *Washington Post*: p. A1.

## REFERENCES

## REFERENCES

- Bordo, S. (2003). *Unbearable weight: Feminism, western culture, and the body*. Berkeley: University of California Press.
- Campos, P. (2004). *The obesity myth*. New York: Gotham Books.
- Dowdey, D. (1987). Rhetorical techniques of audience adaptation in popular science writing. *Journal of Technical Writing & Communication*, 17 (3), 275-285.
- Dunwoody, S, & Ryan, M. (1985). Scientific barriers to the popularization of science in the mass media. *Journal of Communication*, 35, 26-42.
- Fahnestock, J. (1986). Accommodating science: The rhetorical life of scientific facts. *Written Communication*, 3 (3), 275-296.
- Fikkan, J, & Rothblum, E. (2005). Weight bias in employment. In Puhl, R., Brownell, K.D, Schwartz, M.B. & Rudd, L. (Eds.), *Weight bias: Nature, consequences, and remedies* (15-28). New York: Guilford.
- Gilman, S. (2008). *Fat: A cultural history of obesity*. Cambridge: Polity Press.
- Kirkland, A. (2003). Representations of fatness and personhood: Pro-fat advocacy and the limits and uses of law. *Representations*, 82, 24-51.
- Lambert, C, Lepre, C, & Massengale, J. (2007). Obesity in the news: A multiyear framing analysis of three general news magazines. (unpublished paper) International Communication Association Conference.
- LeBesco, K. (2004). *Revolting bodies? The struggle to redefine fat identity*. Amherst: University of Massachusetts Press.
- Martin, E. (1994). *Flexible bodies*. Boston: Beacon Press.
- Nelkin, D. (1987). *Selling science: How the press covers science and technology*. New York: W.H. Freeman.

Oliver, J. E. (2005). *Fat politics: The real story behind America's obesity epidemic*. New York: Oxford University Press.

Paquette, M., & Raine, K. (2004). Sociocultural context of women's body image. *Social Science & Medicine*, 59, 1047-1058.

Rothblum, E. (1992). The stigma of women's weight: social and economic realities. *Feminism & Psychology*, 2(1), 61-73.

Saguy, A.C., & Almeling, R. (2008). Fat in the fire? Science, the news media and the 'obesity epidemic.' *Sociological Forum*, 43, 53-83.

Yadlon, S. (1997). Skinny women and good mothers: The rhetoric of risk, control, and culpability in the production of knowledge about breast cancer. *Feminist Studies*, 23, 645-677.

Yancey, A. (2006). Obesity at the crossroads: Feminist and public health perspectives. *Signs*, 31, 425-443.



## CURRICULUM VITAE

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