Personal Responsibility and the Body: Challenging Normative Discontent through Critical Obesity Literature

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Bachelor of Psychology (Honours)

This thesis is presented in partial fulfilment of the requirements for the degree of Bachelor of Psychology (Honours), Murdoch University, 2012.
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Abstract

Contemporary Western society positions the individual as responsible for themselves and their bodies, with weight understood as being personally controllable. This study sought to explore the previously undiscussed relationship between obesity stigma and normative discontent by considering the idea that information challenging contemporary beliefs about obesity and weight might assist women of all sizes in feeling less accountable for their bodies. 70 women from Perth, Western Australia (M age= 26, SD=10.26) participated in this study. Participants were randomly allocated to three groups: 27 read an article prioritising scientific information that highlighted the powerful biological factors that can counteract weight loss attempts, 20 participants read an anecdotal article demonstrating the life-changing amounts of commitment required to maintain weight loss, and 23 participants read a control article that represented contemporary views. Although expected, no significant differences were found between groups for antifat attitudes or responsibility for weight. The Scientific Evidence condition scored significantly higher than the Personal Story condition for worry about imperfection and significantly lower for overall appearance ratings. Unexpectedly, the Scientific Evidence condition scored significantly lower than the Control for self esteem. The results are discussed in the context of the complexity of delivering critical obesity messages that alleviate the burden of responsibility.
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Personal Responsibility and the Body: Challenging Normative Discontent through Critical Obesity Literature

Body dissatisfaction is considered to be a significant issue for women in contemporary Western society. As such a high prevalence of women report dissatisfaction with their bodies, many scholars have adopted the term “normative discontent” to describe this phenomenon, suggesting that this dissatisfaction is so common that it is expected (Tantleff-Dunn, Barnes, & Gokee-Larose, 2011). Weight dissatisfaction in particular is a significant area of discontent for women. Bordo (1993) argues that it is not considered unusual for contemporary women to have a preoccupation with weight and diet. Furthermore, a study conducted by Cash and Henry (1995) demonstrated that fifty percent of a sample of women aged from 18 to 70 reported concerns about being or becoming overweight, and were engaged in dieting. Various studies have determined that weight dissatisfaction appears to affect women regardless of their size (Allaz, Bernstein, Rouget, Archinard & Morabia, 1998; Heatherton, Mahamedi, Striepe, Field & Keel, 1997).

The presence of this dissatisfaction relates to the pressure placed upon women to conform to the thin ideal. An ultra-thin body shape is consistently promoted as socially desirable and attainable, despite it being nearly impossible for the majority of women to retain (Bordo, 1993; Brownell, 1991a; Fitzsimmons-Craft et al., 2012; Trottier, Polivy, & Herman, 2005). The widespread depiction of this figure in images throughout popular culture, particularly in the media and advertising, has allowed for a normalisation of thinness, which generates misconceptions regarding its achievability (Melcher & Bostwick Jr., 1998). Women are particularly affected by expectations to have a socially desirable body. From a young age, women are
socialised to understand that their appearance is highly valued by their culture, as well as understand that it should be valuable to them (Cash & Henry, 1995). Attaining a socially desirable physique and having ‘body success’ is perceived to be associated with numerous personal benefits in social, economic and health domains. Failure to achieve one’s desired weight or a socially desirable body may result in consequences such as stigmatisation and discrimination (Puhl & Brownell, 2001). The pressure for women to avoid obesity and overweight conditions is more heavily endorsed than for men (Thompson, Dinnel and Dill, 2003), and the repercussions of having a socially undesirable figure are also more evident (Fikkan & Rothblum, 2012; McLaren & Kuh, 2004).

In contemporary Western society, a person’s appearance is considered to be the result of their individual behaviours and choices (Donaghue & Clemitshaw, 2012). This idea is reinforced by the belief that the body is something that people can control and master if appropriate amounts of effort are applied (Bordo, 1993; Fitzsimmons-Craft et al, 2012). Despite this being a widely accepted view, it has begun to be challenged through the gathering of evidence that suggests a person’s weight is not simply a reflection of the amount they eat and exercise (Bacon, 2008; Brownell, 2010; Donaghue, 2011).

In this study, I explore neoliberalism, and how the promotion of self-responsibility reinforces the idea that our bodies and weight are a direct outcome of our personal choices and behaviours. These ideas influence the way society understands the body. This social construction determines what are seen as issues with the body, and provides a basis for a rectification of these issues. I then focus upon the existence of obesity in contemporary Western society, and explain how neoliberalism shapes the way we understand obesity. I describe the flaws associated
with our views regarding dieting and weight loss, and their relationship to health. These misunderstandings, supported by neoliberal ideologies, can serve as a justification of the presence and ramifications of obesity stigma, particularly in regard to women. I discuss the powerful attempts to disrupt the misperceptions of obesity by highlighting the presence of critical obesity literature and activist movements, which oppose viewing body size as a personally controllable characteristic. These principles have been applied in various studies to improve obese persons’ perceptions of their bodies (Conradt et al., 2009; Robinson & Bacon, 1996). I then examine the presence of normative discontent in women of all body sizes. Finally, I consider the previously undiscussed idea that obesity stigma and normative discontent share similarities. Both concepts are the products of a society that places a high value upon physical appearance, particularly in regard to women, and both are fuelled by the idea that one’s body can be used to surmise information about that person. This connection will be used to explore whether the approaches used to placate attitudes towards responsibility for weight in obese women have wider effects beyond those originally intended, that is, whether these methods may assist in ‘softening’ perceived responsibility for women of any body size. This question will be explored through the provision of different types of critical obesity information that challenge contemporary ideas about the body. As obesity stigma has not been compared to the presence of normative discontent in women, despite the similarities between the two concepts, this study is exploratory in its design, with the aim of stimulating future research in this area.
Neoliberalism and the Moral Body

The idea of individual responsibility for circumstances is grounded in neoliberalism, a dominant ideology that pervades contemporary Western society. Freedom of choice is one of the central views of neoliberal societies. Rose (1996) argues that this is literally a freedom to choose; individuals must understand that their lives and identities are shaped through their personal choices. Along with the freedom to choose comes the freedom to moderate, as well as the freedom to resist; the ideal citizen is able to engage in appropriate amounts of self-discipline. Neoliberal ideology holds the individual accountable for their own circumstances, and a person is expected to make the most of any opportunities they have, rather than blaming external forces such as society or the environment. Thus, an individual’s successes, as well as their failures, are seen as the result of the personal choices they have made.

The idea that our bodies are controllable through our behaviours and choices is a major contributor to the assumption that we are responsible for our bodies in the contexts of weight and health (Brownell, 1991b). The body is seen as malleable, something we can manipulate through diet and exercise (Bordo, 1993), as well as through surgical means, which has become increasingly normalised in the last two decades (Leve, Rubin & Pusic, 2012). Additionally, the body is not simply viewed as something that can be controlled, but something that should be controlled. Neoliberalism encourages the idea of constant self-improvement (Rose, 2000), in which people are required to make the best of themselves and their lives, and to take advantage of opportunities for advancement.
A popular viewpoint dominating contemporary society, and one that will be challenged in the sections to come, is the notion that one must possess a particular body—specifically, to be of a particular size—in order to be of sound health. People are expected to take control of their bodies for their own wellbeing, to preserve their health and their lives. If there are issues with one’s body, it is seen as being one’s personal responsibility to recognise and rectify these issues, either themselves, or with the help of a professional. These attitudes are reflected in health promotion strategies that emphasise the role of the individual in both the cause and the solution to their problems (Donaghue, 2011; Minkler, 1999).

In contemporary Western society, the body is commonly viewed as an outer portrayal of our inner moral state (Bordo, 1993). Through the view that the body is something that we have the ability to shape through our choices and behaviours, our appearance can function as an embodiment of the type of person that we are. Therefore, a person whose body meets the definition of ‘good’ is seen as a good and moral person (Jutel, 2001). A person who is obese or overweight is considered to be immoral for possessing a ‘bad’ body (Brownell, 1991b), and someone who knowingly exacerbates a condition largely viewed as preventable (Saguy & Riley, 2005). Moralistic descriptors are often employed in media articles and press conferences regarding obesity (Saguy & Ameling, 2008), suggesting that the behaviours associated with overweight are ‘sinful’. These views have also been observed in the general population. Hoverd and Sibley (2007) demonstrated that people apply moral discourse when making evaluations about the body, and that this language was not simply interchangeable with other forms of negative appraisal. Participants did not use this terminology in a synonymic fashion but because it had a
particular meaning. Saguy and Riley argue that the utilisation of this language may play a role in rationalising the tendency to blame the individual for their condition.

**Our Behaviours and Our Bodies**

The ideas promoted in contemporary society have allowed our bodies to be regarded as a physical representation of the choices we make, the behaviours we engage in, and the personal qualities we have. Due to this, visual information is typically used to make assumptions about the healthiness of a person (Jutel, 2001). A person whose appearance conforms to societal ideals is seen to have engaged in appropriate behaviours, or to have avoided inappropriate behaviours to achieve this. Furthermore, through possession of a ‘good’ body, this person is understood to be of good health, and to have made mindful, health enhancing choices (Brownell, 1991b). The possession of this successful body aligns with perceptions of success in other areas, and numerous positive personal qualities. For example, a woman who is of a socially acceptable size is seen as responsible, someone who works hard to maintain their appearance, and who makes disciplined choices in regard to food and exercise (Brownell, 1991a, 1991b). This is reinforced by popular cultural outlets, such as through portrayals of thin women on television (Trottier et al., 2005).

A person with an undesirable body is seen as accountable for this outcome, and viewed as having engaged in irresponsible behaviours. The obese person, who stands in opposition to the cultural ideal of thinness, is viewed less favourably than the slender person. Obese and overweight people are viewed as irresponsible, lazy and undisciplined (Puhl & Heuer, 2010). They are seen as unable to control themselves, overwhelmed by the concept of freedom of choice, and unable to apply appropriate
amounts of moderation and restraint due to a lack of willpower (Brownell, 1991b). These beliefs are embodied by their perceived engagement in risky behaviours such as overconsumption of unhealthy foods, and being too sedentary. As these behaviours are understood to be unhealthy in contemporary society, the obese person is viewed as an unhealthy person, irrespective of whether they have actually engaged in these behaviours. Additionally, they are seen as individually responsible for this outcome. They are thus placed in a position where they are viewed as obliged to seek betterment and to take responsibility for themselves for the sake of their own health.

**Obesity and Neoliberalism**

Our understanding of obesity and overweight is constructed within the overarching framework of the neoliberal ideology. As the obese or overweight body is understood to be an unattractive body, and body size is commonly considered to be connected to health, the obese person is typically blamed for exacerbating its condition through undesirable behaviours and choices (Cogan & Ernsberger, 1999; Saguy & Almeling, 2008). This perception allows obesity to exist as a perfect example of the consequences of not being a responsible citizen.

The outcome of the neoliberal view is that the slender person is seen as healthier simply because they are not obese. This belief does not take into account the presence of overweight people who eat mindfully and are physically active, slender people who are sedentary and eat unhealthily, or people with anorexia and bulimia (Saguy & Riley, 2005). The inconsistencies that exist regarding our understanding of the relationship between weight and health are discussed below.
Unrealistic Views of Weight Loss

Society is abounding with methods as to how weight loss should be tackled. While some may provide sound advice, others are unsafe and are not based upon healthy recommendations (Anderson, Konz, & Jenkins, 2000). Despite the existence of so many approaches, there is a common perception that if one method of weight loss is successful for some, then it should work for everyone (Dansinger, Gleason, Griffith, Selker & Schaefer, 2005). This perception suggests that failure to lose weight reflects upon individual flaws, rather than a fault residing with the particular programme (Cogan & Ernsberger, 1999).

Although public understandings of weight and body size are simplistically constructed to represent the outcome of eating and activity levels, within obesity science, the relationship between weight and health are considered much more complex and controversial (Gard & Wright, 2005).

Dieting can be a successful method of weight loss in the short term, which can fuel declarations that they do in fact work. However, the rate of weight regain in the long term has led to the conclusion that diets are ineffective at bringing about permanent weight loss for the majority of people (Bacon, 2008; Brownell, 2010; Gagnon-Girouard et al., 2010; Miller, 1999). An investigation by Puhl and Heuer (2010) found that after a year, participants who had modified their lifestyle to lose weight had regained 30-35 percent of the weight they had lost during their treatment. Mann et al. (2007) concluded that between one and two thirds of diet participants weighed more than they did before dieting when they were reassessed four to five years later.
The findings above lend support to the idea that society overestimates the controllability of the body (Brownell, 1991a; 1991b). Trottier et al. (2005) argue that the expectations women have regarding how much weight they can lose, the processes involved, and the subsequent benefits associated with successful weight loss are unrealistic. These expectations may be fuelled by the bombardment of weight loss ‘success stories’ in numerous advertising domains (Gross, 2001), which have increased in number since the 1990s (Grieve & Bonneau-Kaya, 2007).

Not surprisingly, high expectations for weight loss are observed in obese people. These expectations may be related to a prioritisation of appearance modification rather than the improvement of health. As argued previously, our appearance is frequently understood to signify of our health (Jutel, 2001); improving one’s physical health but not physical appearance will not eradicate attributions of irresponsibility or expressions of stigma.

Although weight loss often intends to serve aesthetic improvements, it may also be engaged in to improve a person’s health. While there is general agreement that the increasing prevalence of diseases such as diabetes constitutes a problem, some authors question the choice to predominantly focus upon weight loss as opposed to behavioural change in the context of improving health. This questioning is based upon the finding that thinness does not necessarily characterise healthfulness. Many critics argue that the health improvements experienced after significant weight loss may be more attributable to the individual’s change in behaviours that led to their loss, such as their increase in exercise or improved eating styles (Blair & LaMonte, 2006). Gaesser (1999) argues that the majority of epidemiological studies that examine the link between body weight and longevity do not demonstrate lowest mortality in thin individuals. Evidence exists suggesting that
individual behaviours are more important than body size in determining health, and in predicting health outcomes. A meta-analysis conducted by Blair and Brodney (1999) demonstrated that obese and overweight people who were fit and physically active had lower rates of mortality and morbidity than those who did not; these rates were also lower than sedentary individuals of a normal weight. While obesity remains to be considered as a health problem, the risks associated with being an obese person are argued to be exaggerated (Blair & LaMonte, 2006).

Furthermore, weight loss in itself may not necessarily bring about the positive health benefits commonly perceived. For example, there is little support for the idea that weight loss can decrease death rates (Gaesser, 1999). Conversely, there may be negative outcomes. People at a high weight who become caught in continual cycles of weight loss and regain, referred to as yo-yo dieting or weight cycling, are at a higher risk of developing cardiovascular problems compared to overweight and obese people who maintain a stable weight throughout their lives (Montani, Viecelli, Prévot, & Dulloo, 2006). As long term weight loss largely unsuccessful (Jeffrey et al., 2000), this is concerning. Additionally, the stressfulness of dieting has been positively associated with depression (Ross, 1994). These issues call into question the ethicality of the continued prioritisation of weight loss to promote health when there is such a risk of endangering peoples’ health (Brownell 2010). Understanding the risks that are associated with overweight and weight loss should be prioritised before interventions for weight loss are proposed. It is argued that until more is known about the role of intentional weight loss upon rates of mortality, encouragement to maintain a healthful diet and routine exercise should be prioritised over weight loss (Blair & LaMonte, 2006; Farrell et al., 2002; Gaesser, 1999).
Obesity and Overweight Largely Remain to be seen as the Individual’s Fault

Despite the increasing amount of research dedicated to metabolic contributions to obesity and demonstrating the relationship between weight and biological and environmental factors (Brownell, 1991a; 1991b; Cogan & Ernsberger, 1999; Donaghue, 2011), the prevailing dominant belief in society is that obesity is the fault of the individual. This view persists despite the lack of sure knowledge in obesity science regarding the mechanisms and interrelationships that influence obesity and overweight (Gard & Wright, 2005). The belief of individual responsibility, although a controversial subject in obesity science (Donaghue 2011), is reinforced in popular culture (Sender & Sullivan, 2008), in public health policy (Jutel, 2001), as well as in the academic literature. A behaviourist explanation is predominantly offered as the primary cause of weight problems, wherein the individual is seen as causing their obesity through their engagement in, or avoidance of, particular behaviours, and the solution that is consistently promoted is a rectification of these behaviours (Townend, 2009). In addition, even if the controllability of weight is deemphasised and replaced by a view prioritising biological mechanisms, this may not necessarily eradicate the discrimination that obese people receive. Saguy and Riley (2005) argue that stigma towards obese people may be reinforced if obese people are positioned as biologically inferior to non-obese individuals.

Obesity Stigma

Being obese or overweight is associated with many social consequences. Obesity is perceived as associated with many negative qualities including laziness,
greediness, irresponsibility, lack of willpower, stupidity, and mental instability (Brownell, 1991b; Gordijn, 2010; Puhl & Brownell, 2001; Tiggemann & Anesbury, 2000). These negative qualities are often used to justify the stigmatisation that obese people receive (Crandall, 1994). Crandall and Martinez (1996) argue that groups who are stigmatised are characteristically blamed for being disadvantaged. Obese people are one of the few social groups where discrimination is still seen as socially acceptable (Puhl & Brownell, 2003). Even obese people are likely to express discrimination towards people who are overweight (Wang, Brownell & Wadden, 2004), with studies demonstrating that obese and non-obese individuals share identical views (e.g. Tiggemann & Anesbury, 2000). The stigmatisation of obese people has become widely researched, reflecting a growing recognition that obese people are being significantly harmed by the simplistic, individualised understandings of obesity that fuel the expression of these attitudes.

The stigmatising of obesity and overweight people occurs in many environments. Obese people face stigma in health care (Malterud & Ulriksen, 2011), as many health care professionals believe that obese people are responsible for their weight (Puhl & Brownell, 2001). The attitudes expressed by professionals can affect obese peoples’ health care choices (Drury & Louis, 2002), and may increase reluctance to seek medical advice (Cooper, 1998) or to obtain cancer screenings (Amy, Aalborg, Lyon & Keranen, 2006). Additionally, obese people experience stigma in the workplace. A meta-analysis by Roehling (1999) revealed that obese and overweight individuals are subject to discrimination throughout all stages of the employment cycle from the interview process to termination.

The presence of obesity stigma has numerous implications, such as the development of negative body image and low self esteem (Myers & Rosen, 1999).
The issues faced by obese people can be psychologically damaging; obese people often experience mental health problems (Thomas et al., 2008) such as depression and suicidal ideation (Mather, Cox, Enns, & Sareen, 2009). Mental health issues have been found to be an outcome of obesity, which Cooper argues is more likely to be the result of existing in a fat-hating culture, rather than due to having obese characteristics (1998). Psychological problems in obese people have been demonstrably connected to the presence of stigma (Friedman, Reichmann, Costanzo, Zelli, Ashmore, & Musante, 2005; Puhl & Heuer, 2010).

**Promoting Acceptance**

As demonstrated above, the stigmatisation of obese people is pervasive and present in many contexts, with the ability to cause extensive damage. Although this is a fervent attitude, it is not one that has gone ignored. There have been backlashes from people within both academic and popular arenas who critique the conventional attitudes towards obesity. This is exhibited in ways such as through the increased generation of fat positive literature (Burgard, Dykewomon, Rothblum & Thomas, 2009), and research that challenges dominant methods and perspectives regarding weight loss.

Fat acceptance is a movement, or a collection of movements (Cooper, 1998) that support the idea that fatness should not be targeted or eradicated, but respected as a form of body diversity (Saguy & Riley, 2005). They challenge well-established ideas about the need for fat people to lose weight. While the movement has no unified, common aim, but rather numerous goals expressed by various subgroups, Cooper (1998) argues that this successfully demonstrates that fat people do not
comprise a single entity, but rather they are a diverse spectrum of people who come from a range of backgrounds. Saguy and Riley argue that the fat acceptance movement is becoming increasingly influential in the United States, particularly in regard to health policy.

Additionally, there has been the development of an alternative approach to health, referred to as Health at Every Size (HAES; Bacon, 2008). This approach, with a focus upon self-acceptance, emphasises the idea that all people have the potential to be healthy, no matter how much they weigh (Bacon, 2008; Burgard, 2009). This approach is seen as controversial as it strongly contrasts against the conglomeration of conventional messages insisting that weight loss and attainment of a slender figure is important for health, and necessary for happiness (Burgard). Rather than aiming on reducing weight, Health at Every Size focuses on improving overall physical and psychological health through engagement in activities for pleasure (Gagnon-Girouard et al., 2010). In this paradigm, assessments of health are redirected away from body size and weight, and towards more direct indicators such as LDL cholesterol and blood pressure (Bacon, 2008).

Previous studies have indicated that educating people about the reality of weight loss and maintenance may have promising effects in regard to lessening self blame, and instilling more realistic expectations of weight loss. This has been demonstrated in regard to obese persons’ perceptions of themselves. When obese individuals engaged in consultations where they were provided with realistic information relating to weight loss and dietary approaches, they developed more realistic expectations in regard to losing weight, and showed decreases in self-blame (Conradt et al., 2009). Improvements have also been demonstrated in regard to self
esteem, the decrease of fat phobic attitudes, and, to a lesser extent, depression (Robinson & Bacon, 1996).

In regard to encouraging others to accept obese people despite their condition, the results have been rather mixed (for a review, see Daníelsdóttir, O’Brien & Ciao, 2010). In some circumstances, educating people about the reality of weight loss and the complexity of obesity has shown improved attitudes towards obese and overweight people. For example, Crandall (1994) focussed on persuading subjects that obesity was the result of physiological and genetic factors beyond their control, and found participants’ antifat attitudes decreased. Additionally, a web-based intervention conducted by Hague and White (2005) was successful in reducing antifat attitudes in student teachers and school teachers. However, other studies have shown less promising results. For example, Teachman, Gapinski, Brownell, Rawlins and Jeyaram (2003) found implicit negative stereotypes about overweight people prevailed in both college and general population samples, even after presenting information suggesting that genetics explained 80% of the prevalence. Daníelsdóttir et al.’s analysis of the literature (2010) concludes that although methods that aim on changing perceptions of obesity- particularly in regard to its causes- are often successful, negative attitudes often remain.

Despite the variation in results that have been found, reducing the blame expressed by individuals and society towards particular body conditions is an important step in reducing stigma and promoting diversity.
Normative Discontent

The widespread prevalence of body dissatisfaction in women of all sizes has allowed for a normalisation of this phenomenon, referred to as normative discontent (Rodin, Silberstein & Striegel-Moore, 1984). The idea that one must be of a certain size to be considered attractive and to reap the benefits associated with this perceived attractiveness helps to fuel this dissatisfaction. The tenets of neoliberalism enforce the idea that if a woman cannot achieve a certain appearance, it is due to failings on her part, as her appearance is her own responsibility.

Obesity stigma has not been compared to the presence of normative discontent in women, despite the similarities between the two concepts. Obesity stigma exists to shame the overweight individual, suggesting they should be discontent with their bodies. This stigma results from the idea that the body is within this person’s control, something they could change if only they adopted the right behaviours and attitudes. Normative discontent is partially a product of our bodies not being as compatible with the premises of neoliberalism as is commonly implied. Additionally, a non-obese woman may be able to relate to an obese woman in various ways. A woman who has never been obese may not have shared the same experiences or stigmatisation an obese woman may have. However, she would be aware of the pressure for women to conform to a particular appearance to be perceived as attractive in contemporary Western society. Obese and non-obese women alike are pressured to embody the same ideal of thinness; the vast majority of women have either dieted or have desired weight loss at some point in their lives (Cooper, 1998). The chief difference between obese and non-obese women in this instance lies in the amount of weight that exists between the subject and the target, and the intensity of the repercussions of not being lean enough. Both groups of women exist in a
neoliberal society that sees the individual as responsible for themselves, so both are positioned to feel at fault for any shortcomings.

The Present Study

As discussed in the sections above, previous studies have indicated that promoting acceptance, education, and realistic expectations of weight loss can have positive effects upon obese people. While these messages are present in various forms, they have a common intention; they establish the idea that body weight and behaviour share a complex relationship, and that body weight is not as modifiable through self-discipline as it is commonly believed to be. As these messages challenge fundamental assumptions about the connection between bodies and behaviour, it may be possible that these messages have unintended positive results that extend beyond the samples that have been examined; non-obese people may be able to experience positive effects through the gain of this type of information as well. No previous research has measured the impact that obesity-specific information has on non-obese people’s perceptions of themselves and their bodies; it has typically focussed on non-obese peoples’ perceptions of obese people.

The messages promoted in critical obesity literature challenge the neoliberal assumption that the body is a physical representation of a person’s self-responsibility and self-discipline through demonstrating the limitations and challenges of trying to make long term changes to the body through behaviour change. If non-obese women are able to understand and accept these premises, perhaps they will be able to apply these ideas to their own behaviours and bodies.
This study explores the relationship between obesity stigma and normative discontent. This study seeks to discover whether women’s perceived responsibility for their own weight can be softened through the presentation of critical obesity information that challenges contemporary understandings of weight loss and maintenance, regardless of whether or not they themselves are obese. That is, I am interested in seeing whether women will be more accepting toward themselves if primed by the idea that weight loss and gain is a complex process and not necessarily the sole result of personal behaviour and choice, even if the information relates to a non-reference group.

Additionally, I am interested in what type of information is likely to be associated with softened perceptions of one’s own, and others’, responsibility. An examination of the literature has demonstrated mixed results in regard to the efficacy of statistical and scientifically grounded information versus narrative based, or anecdotal, information. A meta-analysis conducted by Allen and Preiss determined people are slightly more persuaded by statistical information than narrative evidence (1997). However, the issue with this outcome is that they neglected to examine the topics that the information focussed upon. While information derived from credible scientific sources may be more dependable than anecdotal information in certain contexts, this does not imply that people are more likely to be more influenced by this type of data in all circumstances. Anecdotal evidence can have a powerful effect upon individuals’ decisions and behaviours (Enkin & Jadad, 1998). This has been observed in regard to behaviours that are perceived to threaten health. For example, while scientific evidence of the risks of smoking are widely known and accepted, people will often continue to promote counter-evidence of peers who have smoked for considerable portions of their lives without consequence when defending their
own smoking habits (Heikkinen, Patja & Jallinoja, 2010). This suggests anecdotal evidence may be prioritised in the presence of both forms of data. Enkin and Jadad argue that the effectiveness of anecdotal evidence can also be intensified if the described situation is considered to be personally relevant.

For this study, we explored the effects of reading critical obesity literature counteracting the idea that the weight of the body is personally controllable compared with a control group that read conventional information about obesity. The critical obesity literature either focussed on anecdotal or scientific information. While critical obesity information has the ability to be persuasive, the beliefs that exist regarding obesity have prevailed for decades. The content of the World Health Organisation’s fact sheet on obesity and overweight (2012) reflects the lack of success in research, focussing on the prevention of obesity, rather than treatment.

In order to investigate the relative effects of different forms of obesity framing information upon notions of responsibility, participants’ responses were compared after they had either read critical obesity material (either scientific or anecdotal) or material representing the obesity information that society is typically acquainted with (through media and health outlets, for example); the latter was used for control purposes. In addition to investigating the effects of these materials upon participants’ attitudes towards responsibility for weight, we were also interested in the impacts they would have upon anti-fat attitudes, appearance-related perfectionism, body dissatisfaction, and self esteem.
Hypotheses and Aims

Although I was interested in comparing the two aforementioned methods of presenting critical obesity information, this comparison was exploratory. As a result, no directional hypotheses were made. All hypotheses are expressed in terms of expected differences between the experimental groups and the control.

As this study was seeking to coalesce the framing of obesity with normative discontent, the first thing I expected to be affected were participants’ antifat attitudes. I hypothesised the experimental groups would have significantly lower antifat attitudes compared with the control group. As the experimental groups were required to read articles challenging dominant ideas about obesity and responsibility, it was predicted that this would promote more fat-accepting attitudes than in the control groups.

I aimed to explore whether the experimental groups would feel significantly less responsible about the state of their own bodies than the control group.

I sought to investigate whether participants in the experimental groups would have lower overall ratings of perfectionism compared with participants in the control group.

I aimed to investigate whether there would be any significant differences between groups in regard to body dissatisfaction.

I hypothesised that participants in experimental groups would have higher ratings of Self-esteem than those in the control groups after reading critical obesity material. This is consistent with previous research in an overweight and obese
sample that found reduction of blame for obesity led to improved self esteem 
(Robinson & Bacon, 1996).

Method

Participants

Participants consisted of 70 Australian women. 48 participants were 
psychology students at Murdoch University, whereas 12 participants came from 
outside the school of psychology. All participants were based in Perth, Western 
Australia. Participants ranged in age from 17 to 57 years ($M= 26$, $SD=10.26$).

For weight, participants indicated their self-perceived weight status; however, 
due to missing data, responses were only recorded for 42 participants. Of these 
participants, 3 identified as being somewhat underweight, 27 were normal weight, 11 
stated they were somewhat overweight and 1 participant was very overweight.

Participants were asked to indicate their highest level of education. Two 
participants stated that they had completed a degree, 2 participants identified as 
studying at a postgraduate level, 44 participants said that they were currently 
studying at university, 4 participants had TAFE qualifications, 12 participants stated 
that they had completed year high school, and 3 participants left high school before 
completing year twelve. Three participants did not respond.

In regard to sexuality, 58 participants identified as heterosexual, 2 participants 
as bisexual, 2 participants as lesbian, 1 participant as pansexual, and 1 participant
stated that they were sexual. Three participants did not provide answers that allowed for categorisation.

Participants were also asked to indicate their relationship status. Of the participants, 20 identified as single, 26 stated they were in a relationship, 2 identified as defacto, 1 participant was engaged, and 14 participants stated that they were married. One participant did not respond.

For ethnicity, the majority of participants described themselves as Australian or Caucasian/White (57). In addition, 2 participants stated that they were Asian, 2 participants were European, 1 participant identified as Aboriginal, 1 as Arab, 1 as Biracial, 1 as Eurasian, 1 participant identified as English, and 1 as Italian.

The study was advertised on the Murdoch University Psychology Subject Pool webpage. This advertisement is listed in the appendices (Appendix A). Additionally, the study was advertised on the Facebook website on a group page for Murdoch Psychology students. The advertisement specified that only women could participate, and that this was the only selection criteria. As an incentive for participation, half an hour of subject pool credit was offered to psychology students, and the chance to win a 50 dollar Myer voucher was offered to non-psychology students. All participants provided consent to complete the study, which they were required to do before they were able to access the online survey.

Materials

There were three different conditions in this study, each of which was associated with a different article. The Scientific Evidence (SE) condition featured an
excerpt from the same article, but which focussed on scientific advances in regard to understanding the origins of obesity and the difficulties associated with weight loss (Appendix B). This excerpt discussed research procedures led by obesity researchers in order to discover how the body reacts after weight has been lost, and thus focussed on biological and metabolic information. The Personal Story (PS) condition featured an excerpt from an article that provided anecdotal information regarding obesity (Appendix C). It focussed on the experiences of a formerly obese woman and the practices that she engaged in to maintain her current weight. The excerpt demonstrated that in order to avoid weight gain, this woman had to strictly and continually monitor what she consumed, and the amount that she exercised. Her life revolved around her routines, and even slight deviation would result in weight regain.

Both of these excerpts were selected as they challenged the dominant understandings of obesity that are perpetuated in contemporary society, and provided a more complicated picture of the issue. The Control condition (C) featured an excerpt from the World Health Organisation’s fact sheet for obesity and overweight (Appendix D). The article focuses largely on the health consequences of obesity, and suggested that the individual overcome obesity through personal modifications in diet and exercise. This article was selected as it represented widely circulated portrayals of obesity; it presented a limited description of obesity and methods for its prevention, implying that one approach would suit all, and placed responsibility for weight and weight loss in the hands of the individual. All of the information utilised was derived from internet sources. Using naturalistically occurring information was seen as beneficial compared with creating stimulus material, as the excerpts represent realistic messages that are already being projected to society. This
demonstrates that occasionally messages do appear that contradict conventional understandings.

Some of the information that was provided to participants in the Personal Story condition was altered in order for it to be more directly comparable to the Scientific Evidence condition. This related to the amount of weight that the woman in the excerpt had lost. The original weight that was reported (330 pounds) was much higher than the weight of the woman in the example in the Scientific Evidence condition (230 pounds), as well as the amount of weight lost (135 pounds, as opposed to 40 pounds). The figures in the Personal Story condition were changed so that the initial weight of the character and the weight lost was the same as the woman in the Scientific Evidence condition. This change took place in order to minimise the chance that the magnitude of weight loss described would have an impact on participant responses. Additionally, information in the Personal Story condition that referred to the weight loss experiences of the woman’s husband was eliminated so that the participants only had one perspective, the female perspective, to focus on.

Measures

The measures listed here form the questionnaire that was provided to participants, and are listed in the order that they were presented.

**Self esteem.** Self esteem was measured using Rosenberg’s Self Esteem Scale (1965), which consists of 10 items rated on a 4 point Likert Scale ranging from *strongly agree* (1) to *strongly disagree* (4). Of these questions, five are worded
positively, and five are worded negatively (requiring reverse coding), and include items such as “I feel that I am a person of worth, at least on an equal plane with others” and “I feel I do not have much to be proud of”. Scores range from 0 to 3, and total scores range from 0-30, with higher scores indicating higher self esteem, and scores from 15-25 suggesting normal self esteem. The scale’s internal consistency was high ($\alpha=0.89$).

**Antifat attitudes.** Crandall’s Antifat Attitudes Questionnaire (1994) was used to measure participants’ antifat attitudes. This test consists of three scales: *Dislike* (7 items) focusing on prejudice, with items such as “I really don’t like fat people much” ($\alpha=0.83$); *Fear of Fat* (3 items) examining participants’ own concerns about fatness, with items such as “I feel disgusted with myself when I gain weight” ($\alpha=0.90$); and *Willpower* (2 items) relating to participants’ beliefs about the controllability of weight, with items such as “Fat people tend to be fat pretty much through their own fault” ($\alpha=0.80$). The *Willpower* scale normally consists of 3 items, but due to missing data, the first item was removed. Participants indicated their responses according to a 10 point Likert Scale ranging from *very strongly disagree* (0) to *very strongly agree* (9). Scores were produced for each subscale, and a total score was also generated, with higher scores indicating higher antifat attitudes. Overall, internal consistency for the scale was high ($\alpha=0.84$).

**Perfectionism.** The Physical Appearance Perfectionism Scale (Yang & Stoeber, 2012), was used to measure perfectionism in regard to appearance, and consisted of two subscales: *Worry about Imperfection*, featuring 7 items ($\alpha=0.91$),
which measures concern regarding an imperfect appearance, and includes items such as “I worry that my appearance is not good enough”; and *Hope for Perfection*, which included 5 items ($\alpha=0.91$), and measured hope that appearance is of a perfect standard, with items such as “I hope my body shape is perfect”. Items were rated according to a 5 point Likert Scale, ranging from *strongly disagree* (1) to *strongly agree* (5). A total score was calculated for each subscale, as well as for the whole scale, with a higher score indicating a higher value placed upon perfection. Internal consistency for the whole scale was high ($\alpha=0.87$).

**Responsibility for weight.** 30 items were used to assess Responsibility for Weight (Appendix E). These were self-generated due to the inexistence of an appropriate scale to measure this construct. While the idea that weight is typically viewed by society as the individual’s own responsibility has been widely discussed, it has barely been measured. A possible exception is a study by Klaczynski, Goold, and Mudry (2004), which examined perceptions of control over weight in a mix-sexed adolescent sample, some items of which related to individual responsibility. As I have argued earlier, perceived control is related to notions of individual responsibility. Additionally, the *Willpower* scale in the Antifat Attitudes Questionnaire consists of items that focussed on perceptions of others’ responsibility for weight. However, the subscale only featured three items, and did not examine personal responsibility.

The Responsibility for Weight Scale that was created for this study had good face validity, and this was complemented by high internal consistency ($\alpha=0.87$). There were three Responsibility for Weight subscales: *Responsibility in
Self (RS) (11 items), focussing on perceptions of one’s own responsibility, and including items such as “I am responsible for the way I look” (α=0.81); External Orientation (EO) (7 items), examining one’s perceptions of their peers’ beliefs regarding one’s own responsibility, and including items such as “I want people to know that I make an effort to look the way that I do” (α=0.83); and Responsibility in Others (RO) (9 items) which examined perceptions of other peoples’ responsibility, featuring items such as “When people don’t look good, it is because they are making poor choices” (α=0.79). The RO subscale initially consisted of 12 items, but due to low reliability, three items were removed, which reduced the total number of Responsibility for Weight items to 27. Items were responded to according to a 6 point Likert Scale that ranged from Strongly Disagree (1) to Strongly Agree (5). Total scores were calculated for each subscale, and for the whole scale. In order to calculate a total score, negatively worded items were reverse scored.

Body dissatisfaction. Body dissatisfaction was measured using the Body Areas Satisfaction Scale (BASS), a subscale of the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash & Mikulka, 1990; Cash, 2000). The items asked participants to indicate the amount of dissatisfaction that they felt toward eight different areas of their body according to a 5 point Likert Scale ranging from very dissatisfied (1) to very satisfied (5). The internal consistency for this scale was high (α=0.88). Although participants responded to all items, due to space limitations, only Weight and Overall Appearance were examined. Additionally, these items were more relevant to body weight.
**Body size.** Two items from the Self-Classified Weight Scale, a subscale of the MBSRQ, were included so that participants could provide information about their own body size. The items asked participants to estimate the size that they thought their body was (*Self-Perceived Weight Status*), as well as what their peers would estimate their bodies to be (*Other-Perceived Weight Status*), and ranged from 1 (very underweight) to 5 (very overweight). This method was selected in favour to Body Mass Index (BMI), because we were more interested in discovering what people thought about their own weight, as this seemed more relevant to this study compared to examining a calculated number.

**Demographics.** Additionally, participants were asked to provide their age, gender, sexual orientation, current relationship status, ethnicity and highest level of education achieved. Participants were able to freely enter their answers rather than choosing from a predetermined list, allowing them to be more flexible in regard to their responses.

**Procedure**

Participants were sent a link to the online questionnaire upon their enrolment through the Subject Pool website. They then read an introduction page outlining a brief background to the study, and what was required of participants (Appendix F). The background was intentionally ambiguous so that the true nature of the study was not revealed. Participants were informed that they would be reading an article about obesity, and would be required to complete a questionnaire relating to body
assessments of themselves and others, but were not informed that notions of responsibility for appearance was the main focus of the investigation. After reading the introduction page, they were instructed to click “proceed” if they consented to participation, or to click “cancel” if they did not consent. Through a setting created by the website administrator, the participants were then randomly assigned to one of the three conditions: (a) Scientific Evidence ($n=27$); (b) Personal Story ($n=20$); or (c) Control ($n=23$). Participants read one of the three articles, and were then asked to describe their immediate thoughts regarding the article that they had been provided with. Following this, they each completed identical questionnaires. The participants were then invited to supply additional comments in the event that this would assist with interpreting their responses. Finally, they were requested to provide demographical information. All questions were presented as optional in the event that they made participants uncomfortable. After completion, participants were given a debrief (Appendix G) which described the true purpose of the study, as well as provided the excerpt for each condition, and webpage links to the original articles.

**Design**

The Obesity Framing provided to each participant acted as the independent variable for this study, and consisted of three levels (Scientific Evidence, Personal Story, and Control). A one way analysis of variance (ANOVA) was conducted across all dependent variables, with whole scales and subscales measured. Tukey’s HSD was used for post-hoc analyses (with $\alpha=0.05$). In all circumstances, unless indicated, variables had a normal distribution, and the assumption of homogeneity of variance was not violated.
In addition, 3 x 2 ANOVAs were conducted to determine whether the effects of obesity framing were moderated by the body weight status of the participants. The independent variable, Body Weight had two levels; participants were either defined as Not Overweight (if they had selected normal weight, somewhat underweight, or very underweight in the questionnaire) or Overweight (if their response had been either somewhat overweight or very overweight). Due to some missing data for this particular item, the number of participants who could be categorised according to weight was somewhat diminished, and normality and homogeneity of variance was not always maintained. This meant that the 3 x 2 ANOVA results required cautious interpretation as they were not powerful. Consequently, these analyses are not included in the results.

Results

The descriptive statistics for all dependent variables are presented in Table 1.
Table 1

*Means and Standard Deviations of Dependent Variables for all Article Conditions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Article Version</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scientific Evidence ((n=27))</td>
</tr>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>Self Esteem</td>
<td>1.85</td>
</tr>
<tr>
<td>Antifat Attitudes</td>
<td>3.48</td>
</tr>
<tr>
<td>Dislike</td>
<td>2.52</td>
</tr>
<tr>
<td>Fear of Fat*</td>
<td>6.06</td>
</tr>
<tr>
<td>Willpower*</td>
<td>4.86</td>
</tr>
<tr>
<td>Perfectionism</td>
<td>3.47</td>
</tr>
<tr>
<td>Worry about Imperfection</td>
<td>3.34</td>
</tr>
<tr>
<td>Hope for Perfection</td>
<td>3.64</td>
</tr>
<tr>
<td>Responsibility for Weight</td>
<td>3.28</td>
</tr>
<tr>
<td>Self Responsibility</td>
<td>3.68</td>
</tr>
<tr>
<td>External Orientation</td>
<td>3.08</td>
</tr>
<tr>
<td>Responsibility in Others</td>
<td>2.94</td>
</tr>
<tr>
<td>Body Dissatisfaction (BASS)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>2.63</td>
</tr>
<tr>
<td>Overall Appearance</td>
<td>2.93</td>
</tr>
<tr>
<td>Self perceived weight status*</td>
<td>3.33</td>
</tr>
<tr>
<td>Other perceived weight status*</td>
<td>3.11</td>
</tr>
</tbody>
</table>

* Due to measurement errors, recorded responses for these conditions are lower than the participant numbers indicated.

A one-way between groups analysis of variance (ANOVA) was used to investigate the impact of obesity framing upon each of the dependent variables.

Despite the elimination of outliers as indicated by boxplots, normality was violated for the *Fear of Fat* subscale of the Antifat Attitudes Questionnaire, the
External Orientation and Responsibility in Others subscales of the Responsibility for Weight Scale, the weight and overall appearance items from the BASS, and Self Esteem. Additionally, homogeneity of variance was violated for the PAPS’ Worry about Imperfection subscale, and for the weight item and the total BASS scale. Due to ANOVA being robust in violations of normality and homogeneity of variance, these analyses were conducted regardless. However, the results should be interpreted with caution.

There was no significant main effect of obesity framing condition for the Dislike subscale of the Antifat Attitudes Questionnaire, $F (2, 66) =0.902, p=0.41$. There was no significant main effect of obesity framing on Fear of Fat, $F (2, 40) =0.15, p=0.86$. There were no significant differences between obesity framing conditions for the Willpower subscale, $F (2, 40) =0.14, p=0.87$.

For the Responsibility for Weight Scale, participants in the obesity framing conditions did not differ significantly in regard to Personal Responsibility, $F (2, 65)= 0.80, p=0.45$, External Orientation, $F (2, 64) =1.78, p=0.17$, or for Others’ Responsibility, $F (2, 66) =0.25, p=0.78$. These results suggest that the obesity framing manipulation did not affect participants’ responses to these items.

A significant difference was found between groups for the Worry about Imperfection subscale, $F (2, 65) =4.08, p=0.02$. Post hoc analyses indicated that the Scientific Evidence group had significantly higher worry about imperfection than participants in the Personal Story group. Neither experimental condition differed significantly from the control. There were no significant differences between obesity framing conditions for Hope for Perfection, $F (2, 64) =0.18, p=0.84$, and no significant main effect for the total scale, $F (2, 66) =2.27, p=0.07$. 
In regard to the body dissatisfaction items from the BASS, for Overall Appearance, there was a significant main effect for obesity framing, $F (2, 65) =4.69$, $p=0.01$. Post hoc analyses revealed that participants in the Scientific Evidence condition were significantly more dissatisfied than participants in the Personal Story condition. There were no differences between the experimental and control groups. There were no significant differences between groups on body dissatisfaction ratings for Weight, $F (2, 65) =1.74$, $p=0.18$.

There was a significant main effect for Self Esteem, $F (2, 65) = 4.37$, $p=0.02$. Post hoc analyses showed that participants in the Scientific Evidence condition had significantly lower self esteem than participants in the Control condition. The results for the Personal Story condition were not significantly different.

As demonstrated, participants in the experimental conditions did not score significantly higher on positive constructs than the Control group; this finding did not confirm our hypotheses for any of the dependent variables.

**Discussion**

This study sought to explore whether information that challenged common understandings about obesity through either anecdotal or statistical information could positively affect women’s perceptions of their own responsibility for their weight, and promote acceptance for one’s size.

In regard to antifat attitudes, there were no significant differences between the experimental and control groups for any of the subscales, or in regard to their total scores. These results were unexpected, as it was predicted that the experimental
groups would be significantly more accepting of people of a higher weight through exposure to information illustrating the complexity of weight loss and maintenance. However, the content of the control group article may have inspired those participants to question the idea that fat people were simply not following the suggestions made by the World Health Organisation. Participants were given the opportunity to comment on their designated article, and many mentioned that the information was narrow-minded, exclusionary, and unrealistic.

No significant results were determined for the Responsibility for Weight Scale or any of its subscales. This may have been due to article choice. None of the articles explicitly stated that people are not personally responsible for their weight; this was up to participants to deduce. The articles simply demonstrated that it was extremely difficult, or even impossible, for people to be able to keep weight off through their personal actions.

For the Physical Appearance Perfectionism Scale, there were no significant differences between conditions for the Hope for Perfection subscale, or for the full scale. This may be due to there being no direct manipulation upon participants’ desire to have a perfect appearance.

In regard to the Body Areas Satisfaction Scale, dissatisfaction with weight did not differ significantly between conditions. These results may be due to weight variations within each condition due to the random assignment of participants. In addition, the articles were not selected on the basis of whether they had the potential to reduce body dissatisfaction, but whether they challenged conventional ideas about why obesity exists.
There were various significant results that were not predicted. In comparison to the control group the participants who read the scientific article had significantly lower ratings for self esteem. However, there was no significant difference for self esteem between the Personal Story condition and the other conditions. These results were unexpected, as the original hypotheses had explored the idea that the experimental groups would have higher levels of self esteem than the control, and the idea that an experimental group may score lower was not considered.

In addition, compared with the Personal Story group, the Scientific Evidence group worried significantly more about imperfection. Participants in the Scientific Evidence group were also significantly more dissatisfied with their overall appearance in comparison to the Personal Story condition.

The significant differences between the Personal Story and Scientific Evidence conditions in these instances confirm our exploratory hypothesis about different forms of information having different impacts on audiences. However, the variables in which significant differences were found were negative constructs, such as worry and dissatisfaction. We expected that both experimental conditions would have lower scores on negative constructs compared to the control condition, whereas our results suggest that the Personal Story condition was not significantly different, and that the Scientific Evidence condition actually produced higher scores.

One possibility that the Scientific Evidence group had significantly lower scores for the above variables is related to the excerpt that was selected for this study. Although the Scientific Evidence challenges common perceptions regarding the ease of losing weight and maintaining weight loss for obese people, it also suggests that weight loss techniques are generally ineffective in the long term, and
that even experts are not optimistic about the potential for long term weight loss. While some individuals may experience a ‘freeing’ upon realising that their lack of success is not necessarily their fault, it is unlikely that participants’ desire to lose weight - if they had one - was eliminated through the presentation of this information. Perhaps this realisation left these participants in a state of helplessness. In comparison, the Control article, despite presenting a narrow view regarding the obesity and overweight condition, at least suggested that individuals were able to personally change their circumstances by improving the way they ate and the frequency they exercised, despite this being less realistic information; this article was intended to reinforce the beliefs of the majority of the population. The results that were found suggest that the type of information in the Scientific Evidence article may need to be handled sensitively in future circumstances if it is made more visible in the future. The idea that weight is not personally controllable may be discouraging in a society that places such a high value upon thinness and attractiveness. If variability in body types were more celebrated, or at least respected, as per the aims of the Fat Acceptance Movement (Saguy & Riley, 2005), perhaps this information would be better received.

There are various limitations in regard to this study. The participants are not representative of the general population due to advertisement predominantly occurring within a university setting. This may have influenced their responses to particular items. In addition, because of measurement errors, some of the data for certain scales were not recorded for some participants. Consequently, for the scales that were affected, analyses were conducted with a smaller number of participants than originally intended. Due to these errors, any significant results needed to be interpreted carefully. Despite this, however, these results may indicate constructs
that may be beneficial to re-examine in the future. Furthermore, due to a lack of an appropriate measure, the questionnaire included a scale that was constructed for the purpose of this study; it had not been subjected to prior piloting or validation procedures.

Future studies may consider investigating the influence of body weight upon responses to particular types of obesity framing manipulations, particularly as this was unable to be investigated here. The respective responses of overweight/obese and non-obese participants’ responses could be contrasted in order to further examine the idea that there may unintended positive consequences of critical obesity literature. Additionally it may be beneficial to implement anti-dieting, weight positive or fat acceptance programs that have initially targeted obese people in order to explore the possibility of widespread effects for body acceptance (i.e. Bacon, 2008; Robinson & Bacon, 1996). This may be more effective than presenting articles that are considered challenging to dominant views, as they have already been put into practice with another population and so have been shown to be effective. Additionally, if the Responsibility for Weight Scale were to be used in future, it may more beneficial to apply it to a longitudinal study to observe whether notions of responsibility improve over time in response to a particular intervention.

Despite the limitations that are presented above, this study has demonstrated that the relationship between normative discontent and obesity stigma is one that should be explored in a greater capacity in the future.
References


Cash, T. F. (2000). *The Multidimensional Body-Self Relations Questionnaire users’ manual (3rd Revision)*. Old Dominion University, Norfolk, VA


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Figures. Figures and artwork should be submitted in the following digital file formats and with minimum resolution of 300 DPI (600 DPI for line art): TIFF, EPS, PDF, JPEG, or Microsoft Word. Prepare figures according to the guidelines provided in the 6th edition of the APA manual.

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Non-empirical contributions to the scholarship of teaching and learning in the psychology of women must be submitted directly to the Teaching Section Editor for peer review. Limited to about 10 pages, these essays should follow the general guidelines of APA’s Publication Manual, except without an Abstract or title page (instead concluding with a 1-2 sentence bio of the author including contact information) and confining headings to a single level (Level 1).

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Appendix A
Subject Pool Advertisement

Project Details

Project Name: 2012/167 - Attitudes towards body, body maintenance and obesity

Description:
Obesity is seen as a significant issue in contemporary society, with the prevalence of overweight and obese persons increasing rapidly. At the same time, body maintenance behaviours are frequently promoted in all populations. This study is open to all female students, and seeks to investigate attitudes towards body image and obesity. Participation involves reading an article and completing a questionnaire. It will take about thirty minutes to complete, for which 0.5 hours of subject credit will be awarded. To take part in the study, simply click “enrol” below, and the URL for the survey will be sent to your email address. If you have any questions, please contact Justine Thomas (justine_thomas@live.com.au) or Ngaire Donaghue (n.donaghue@murdoch.edu.au).
Appendix B

Article for Scientific Evidence Condition

“I think many people who are anxious to lose weight don’t fully understand what the consequences are going to be, nor does the medical community fully explain this to people,” Rudolph Leibel, an obesity researcher at Columbia University in New York, says. “We don’t want to make them feel hopeless, but we do want to make them understand that they are trying to buck a biological system that is going to try to make it hard for them.”

Leibel and his colleague Michael Rosenbaum have pioneered much of what we know about the body’s response to weight loss. For 25 years, they have meticulously tracked about 130 individuals for six months or longer at a stretch. The subjects reside at their research clinic where every aspect of their bodies is measured. Body fat is determined by bone-scan machines. A special hood monitors oxygen consumption and carbon-dioxide output to precisely measure metabolism. Calories burned during digestion are tracked. Exercise tests measure maximum heart rate, while blood tests measure hormones and brain chemicals. Muscle biopsies are taken to analyze their metabolic efficiency. (Early in the research, even stool samples were collected and tested to make sure no calories went unaccounted for.) For their trouble, participants are paid $5,000 to $8,000.

Eventually, the Columbia subjects are placed on liquid diets of 800 calories a day until they lose 10 percent of their body weight. Once they reach the goal, they are subjected to another round of intensive testing as they try to maintain the new weight. The data generated by these experiments suggest that once a person loses about 10 percent of body weight, he or she is metabolically different than a similar-size person who is naturally the same weight.

The research shows that the changes that occur after weight loss translate to a huge caloric disadvantage of about 250 to 400 calories. For instance, one woman who entered the Columbia studies at 230 pounds was eating about 3,000 calories to maintain that weight. Once she dropped to 190 pounds, losing 17 percent of her body weight, metabolic studies determined that she needed about 2,300 daily calories to maintain the new lower weight. That may sound like plenty, but the typical 30-year-old 190-pound woman can consume about 2,600 calories to maintain her weight — 300 more calories than the woman who dieted to get there.

Scientists are still learning why a weight-reduced body behaves so differently from a similar-size body that has not dieted. Muscle biopsies taken before, during and after weight loss show that once a person drops weight, their muscle fibers undergo a transformation, making them more like highly efficient “slow twitch” muscle fibers.
A result is that after losing weight, your muscles burn 20 to 25 percent fewer calories during everyday activity and moderate aerobic exercise than those of a person who is naturally at the same weight. That means a dieter who thinks she is burning 200 calories during a brisk half-hour walk is probably using closer to 150 to 160 calories.

Another way that the body seems to fight weight loss is by altering the way the brain responds to food. Rosenbaum and his colleague Joy Hirsch, a neuroscientist also at Columbia, used functional magnetic resonance imaging to track the brain patterns of people before and after weight loss while they looked at objects like grapes, Gummi Bears, chocolate, broccoli, cellphones and yo-yos. After weight loss, when the dieter looked at food, the scans showed a bigger response in the parts of the brain associated with reward and a lower response in the areas associated with control. This suggests that the body, in order to get back to its pre-diet weight, induces cravings by making the person feel more excited about food and giving him or her less willpower to resist a high-calorie treat.

“After you’ve lost weight, your brain has a greater emotional response to food,” Rosenbaum says. “You want it more, but the areas of the brain involved in restraint are less active.” Combine that with a body that is now burning fewer calories than expected, he says, “and you’ve created the perfect storm for weight regain.” How long this state lasts isn’t known, but preliminary research at Columbia suggests that for as many as six years after weight loss, the body continues to defend the old, higher weight by burning off far fewer calories than would be expected. The problem could persist indefinitely. (The same phenomenon occurs when a thin person tries to drop about 10 percent of his or her body weight — the body defends the higher weight.) This doesn’t mean it’s impossible to lose weight and keep it off; it just means it’s really, really difficult.

What’s not clear from the research is whether there is a window during which we can gain weight and then lose it without creating biological backlash. Many people experience transient weight gain, putting on a few extra pounds during the holidays or gaining 10 or 20 pounds during the first years of college that they lose again. The actor Robert De Niro lost weight after bulking up for his performance in “Raging Bull.” The filmmaker Morgan Spurlock also lost the weight he gained during the making of “Super Size Me.” Leibel says that whether these temporary pounds became permanent probably depends on a person’s genetic risk for obesity and, perhaps, the length of time a person carried the extra weight before trying to lose it. But researchers don’t know how long it takes for the body to reset itself permanently to a higher weight. The good news is that it doesn’t seem to happen overnight.

“For a mouse, I know the time period is somewhere around eight months,” Leibel says. “Before that time, a fat mouse can come back to being a skinny mouse again without too much adjustment. For a human we don’t know, but I’m pretty sure it’s not measured in months, but in years.”
Appendix C

Article for Personal Story Condition

The National Weight Control Registry tracks 10,000 people who have lost weight and have kept it off. “We set it up in response to comments that nobody ever succeeds at weight loss,” says Rena Wing, a professor of psychiatry and human behavior at Brown University’s Alpert Medical School, who helped create the registry with James O. Hill, director of the Center for Human Nutrition at the University of Colorado at Denver. “We had two goals: to prove there were people who did, and to try to learn from them about what they do to achieve this long-term weight loss.” Anyone who has lost 30 pounds and kept it off for at least a year is eligible to join the study, though the average member has lost 70 pounds and remained at that weight for six years.

Janice Bridge, a registry member who has successfully maintained a 40-pound weight loss for about five years, is a perfect example. “It’s one of the hardest things there is,” she says. “It’s something that has to be focused on every minute. I’m not always thinking about food, but I am always aware of food.”

Bridge, who lives in Davis, Calif., was overweight as a child and remembers going on her first diet of 1,400 calories a day at 14. At the time, her slow pace of weight loss prompted her doctor to accuse her of cheating. Friends told her she must not be paying attention to what she was eating. “No one would believe me that I was doing everything I was told,” she says. “You can imagine how tremendously depressing it was and what a feeling of rebellion and anger was building up.”

After peaking at 230 pounds in 2004, she tried again to lose weight. She managed to drop 10 pounds, but then her weight loss stalled. In 2006, she joined a medically supervised weight-loss program and slimmed down to 190 pounds.

During the first years after her weight loss, Bridge tried to test the limits of how much she could eat. She used exercise to justify eating more. The death of her mother in 2009 consumed her attention; she lost focus and slowly regained 10 pounds.

“It doesn’t take a lot of variance from my current maintenance for me to pop on another two or three pounds,” she says. “It’s been a real struggle to stay at this weight, but it’s worth it, it’s good for me, it makes me feel better. But my body would put on weight almost instantaneously if I ever let up.”

So she never lets up. Since October 2006 she has weighed herself every morning and recorded the result in a weight diary. She even carries a scale with her when she
travels. In the past six years, she made only one exception to this routine: a two-week, no-weigh vacation in Hawaii.

She also weighs everything in the kitchen. She knows that lettuce is about 5 calories a cup, while flour is about 400. If she goes out to dinner, she conducts a Web search first to look at the menu and calculate calories to help her decide what to order. She avoids anything with sugar or white flour, which she calls her “gateway drugs” for cravings and overeating. She has also found that drinking copious amounts of water seems to help; she carries a 20-ounce water bottle and fills it five times a day. She writes down everything she eats. At night, she transfers all the information to an electronic record. Adam also keeps track but prefers to keep his record with pencil and paper.

“That transfer process is really important; it’s my accountability,” she says. “It comes up with the total number of calories I’ve eaten today and the amount of protein. I do a little bit of self-analysis every night.”

Bridge and her husband each sought the help of therapists, and in her sessions, Janice learned that she had a tendency to eat when she was bored or stressed. “We are very much aware of how our culture taught us to use food for all kinds of reasons that aren’t related to its nutritive value,” Bridge says.

Bridge supports her careful diet with an equally rigorous regimen of physical activity. She exercises from 100 to 120 minutes a day, six or seven days a week, often by riding her bicycle to the gym, where she takes a water-aerobics class. She also works out on an elliptical trainer at home and uses a recumbent bike to “walk” the dog, who loves to run alongside the low, three-wheeled machine. She enjoys gardening as a hobby but allows herself to count it as exercise on only those occasions when she needs to “garden vigorously.” Adam is also a committed exerciser, riding his bike at least two hours a day, five days a week.

Janice Bridge has used years of her exercise and diet data to calculate her own personal fuel efficiency. She knows that her body burns about three calories a minute during gardening, about four calories a minute on the recumbent bike and during water aerobics and about five a minute when she zips around town on her regular bike.

“Practically anyone will tell you someone biking is going to burn 11 calories a minute,” she says. “That’s not my body. I know it because of the statistics I’ve kept.”

Based on metabolism data she collected from the weight-loss clinic and her own calculations, she has discovered that to keep her current weight of 195 pounds, she can eat 2,000 calories a day as long as she burns 500 calories in exercise. She avoids junk food, bread and pasta and many dairy products and tries to make sure nearly a
third of her calories come from protein. The Bridges will occasionally share a
dessert, or eat an individual portion of Ben and Jerry’s ice cream, so they know
exactly how many calories they are ingesting. Because she knows errors can creep
in, either because a rainy day cuts exercise short or a mismeasured snack portion
adds hidden calories, she allows herself only 1,800 daily calories of food. (The
average estimate for a similarly active woman of her age and size is about 2,300
calories.)
Appendix D
Article for Control Condition

Obesity and overweight
Fact Sheet

Key facts
• Worldwide obesity has more than doubled since 1980.
• In 2008, 1.5 billion adults, 20 and older, were overweight. Of these over 200 million men and nearly 300 million women were obese.
• 65% of the world's population live in countries where overweight and obesity kills more people than underweight.
• Nearly 43 million children under the age of five were overweight in 2010.
• Obesity is preventable.

What are overweight and obesity?
Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health.

Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m2).
The WHO definition is:
• a BMI greater than or equal to 25 is overweight
• a BMI greater than or equal to 30 is obesity.

BMI provides the most useful population-level measure of overweight and obesity as it is the same for both sexes and for all ages of adults. However, it should be considered a rough guide because it may not correspond to the same degree of fatness in different individuals.

Facts about overweight and obesity
Overweight and obesity are the fifth leading risk for global deaths. At least 2.8 million adults die each year as a result of being overweight or obese. In addition, 44% of the diabetes burden, 23% of the ischaemic heart disease burden and between 7% and 41% of certain cancer burdens are attributable to overweight and obesity.

Some WHO global estimates from 2008 follow.
• 1.5 billion adults, 20 and older, were overweight.
• Of these 1.5 billion overweight adults, over 200 million men and nearly 300 million women were obese.
• Overall, more than one in ten of the world’s adult population was obese.

In 2010, around 43 million children under five were overweight. Once considered a high-income country problem, overweight and obesity are now on the rise in low-
and middle-income countries, particularly in urban settings. Close to 35 million overweight children are living in developing countries and 8 million in developed countries.

Overweight and obesity are linked to more deaths worldwide than underweight. For example, 65% of the world's population live in countries where overweight and obesity kill more people than underweight (this includes all high-income and most middle-income countries).

What causes obesity and overweight?
The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended. Globally, there has been:
- an increased intake of energy-dense foods that are high in fat, salt and sugars but low in vitamins, minerals and other micronutrients; and
- a decrease in physical activity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization.

Changes in dietary and physical activity patterns are often the result of environmental and societal changes associated with development and lack of supportive policies in sectors such as health, agriculture, transport, urban planning, environment, food processing, distribution, marketing and education.

How can overweight and obesity be reduced?
Overweight and obesity, as well as their related noncommunicable diseases, are largely preventable. Supportive environments and communities are fundamental in shaping people’s choices, making the healthier choice of foods and regular physical activity the easiest choice, and therefore preventing obesity.

At the individual level, people can:
- limit energy intake from total fats;
- increase consumption of fruit and vegetables, as well as legumes, whole grains and nuts;
- limit the intake of sugars;
- engage in regular physical activity;
- achieve energy balance and a healthy weight.

Individual responsibility can only have its full effect where people have access to a healthy lifestyle. Therefore, at the societal level it is important to:
- support individuals in following the recommendations above, through sustained political commitment and the collaboration of many public and private stakeholders;
- make regular physical activity and healthier dietary patterns affordable and easily accessible to all - especially the poorest individuals.

The food industry can play a significant role in promoting healthy diets by:
- reducing the fat, sugar and salt content of processed foods;
- ensuring that healthy and nutritious choices are available and affordable to all consumers;
- practicing responsible marketing;
• ensuring the availability of healthy food choices and supporting regular physical activity practice in the workplace.
## Appendix E

The Responsibility for Weight Scale

<table>
<thead>
<tr>
<th>Personal Responsibility</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am responsible for the way that I look.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. I am responsible for my weight</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. I can control my weight if I try hard enough</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. When I gain weight, it is because I have been lazy</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. When I gain weight, it is because I have eaten unhealthily</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. If I don’t do enough exercise, my body will change</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. I look the way I do because I do not control myself enough</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. I put a lot of pressure on myself to look a certain way</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. There are limitations on what I can do to make myself look the way I want</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td>Disagree</td>
<td>2</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------</td>
<td>----------</td>
<td>---</td>
</tr>
<tr>
<td>10. My genes have a strong impact on my appearance</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11. My genes restrict me from achieving the appearance I want.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

**External Orientation**

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. I want people to know that I make an effort to look the way that I do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>13. People think that I have no will power</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>14. People will judge me if I eat too much.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I feel pressured to conform to a particular appearance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. If I gain weight, my friends will see me differently.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. I think I would be rejected by my friends if I got fat.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. I think it is very obvious to other people when I have gained weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Responsibility in Others</td>
<td>Strongly Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Strongly Agree</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>19. Exercise makes anyone look better.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. People can change their bodies quite easily if they are motivated.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. When people don’t look good, it is because they are making poor choices.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22.* People can’t always help being overweight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. People are too preoccupied with dieting.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24.* If someone is overweight, it is because they are lazy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. Overweight people need to stop eating so much.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26.* Overweight people need to exercise more.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. I don’t think that overweight people care what others think of them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28. Fat people who have fat children are irresponsible parents.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29. People should be ashamed for letting themselves get fat.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>in Others</strong></td>
<td>Disagree</td>
<td>Disagree</td>
<td>Agree</td>
<td></td>
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<td></td>
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<tr>
<td>30. People who blame their appearance on their genes are just making excuses.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
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</tr>
</tbody>
</table>

*These items were removed from analyses due to low reliability*
Attitudes towards body, body maintenance, and obesity

Hi, my name is Justine Thomas, and I am currently doing Honours in Psychology at Murdoch University, under the supervision of Ngaire Donaghue.

Over the past decade, obesity has become a subject of increasing concern in contemporary society. It is seen as a significant and life threatening issue, and, as a result, countless strategies exist regarding weight loss and maintenance. Additionally, attention towards body weight and appearance in non-obese and non-overweight persons has increased, suggesting that body maintenance is an issue that does not necessarily target one population. This study aims to investigate the assessments that women of all shapes and sizes make of themselves in regard to their bodies and body maintenance habits, as well as assessments that are made regarding others.

Contributing to this research is quite simple. The study involves reading an article about obesity, and then completing the subsequent questionnaire, which will take up to half an hour to complete. For your time, you will be granted with half an hour of subject pool credit.

Your participation in this study is entirely voluntary. You may withdraw at any time without discrimination or prejudice. As you are not required to provide any information that will disclose your identity, your responses will be confidential. If you choose to withdraw after you have submitted the questionnaire, however, it may not be possible to withdraw the information that you have provided. If you experience distress in the course of this study, we advise you to contact the Lifeline Organisation on 13 11 14.

If you have any questions regarding this study, please contact me (justine_thomas@live.com.au). Alternatively, you can contact my supervisor, A/Prof Ngaire Donaghue (n.donaghue@murdoch.edu.au). Once the study has been completed, a summary of our findings will be posted on the Murdoch School of psychology website (http://www.psychology.murdoch.edu.au/researchresults/research_results.html) in November.

Your participation in this study would be greatly appreciated.

Justine Thomas,
B.Psych Honours Candidate
Dr Ngaire Donaghue,
A/Professor, Murdoch School of Psychology

This study has been approved by the Murdoch University Human Research Ethics Committee (Approval 2012/167). If you have any reservation or complaint about the ethical conduct of this research, and wish to talk with an independent person, you may contact Murdoch University's Research Ethics Office (Tel. 08 9360 6677 (for overseas studies, +61 8 9360 6677) or email ethics@murdoch.edu.au). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

If you would like to proceed with this survey, click here

If you would not like to proceed with this survey return to the SCORED homepage
Appendix G

Debrief

Thank you for taking part in this study.

This study is about investigating whether peoples’ perceived responsibility for their own appearance, particularly body weight, may be affected by their understanding of obesity. Previously, research has mostly focussed on whether obese peoples’ views of themselves is related to their understanding of why people are, and remain obese, and has not examined how obesity information affects the perceptions of people of all body sizes.

In this study, you were provided with one of three types of information regarding obesity. One group read a segment of the World Health Organisation’s “Obesity and Overweight” fact sheet, which represents the major position of obesity that pervades contemporary society. Another group read a segment of an article from the New York Times called “The Fat Trap” by Tara Parker-Pope, which challenges the mainstream view of obesity as being easy to overcome by demonstrating the difficulties of maintaining one’s weight following weight loss. It focussed on a woman’s personal experiences. The third type of information also came from “The Fat Trap” article, but focussed on scientific developments. We were interested in determining whether people responded more to scientific or personal information when making assessments regarding obesity, and whether exposure to information that suggests obesity isn’t as controllable as we are led to believe has an effect on an individual’s own perceived responsibility for their bodies.

A few details were modified in the Personal Story article in order to make the information comparable with that of the Scientific Evidence article. The weight and weight loss of the woman featured was altered so that the amount that she lost was equivalent to that of the woman depicted in the Scientific Evidence article. Additionally, her age was omitted so that she could be more relatable. These details were changed so that we could observe differences between the two types of information without the differences in magnitude of weight loss having an impact on responses.

These three positions used within this study are presented below.

Please note that we do not endorse any negative or derogatory attitudes which are presented in the scales or textual information.
Leibel and his colleague Michael Rosenbaum have pioneered much of what we know about the body’s response to weight loss. For 25 years, they have meticulously tracked about 130 individuals for six months or longer at a stretch. The subjects reside at their research clinic where every aspect of their bodies is measured. Body fat is determined by bone-scan machines. A special hood monitors oxygen consumption and carbon-dioxide output to precisely measure metabolism. Calories burned during digestion are tracked. Exercise tests measure maximum heart rate, while blood tests measure hormones and brain chemicals. Muscle biopsies are taken to analyze their metabolic efficiency. (Early in the research, even stool samples were collected and tested to make sure no calories went unaccounted for.) For their trouble, participants are paid $5,000 to $8,000.

Eventually, the Columbia subjects are placed on liquid diets of 800 calories a day until they lose 10 percent of their body weight. Once they reach the goal, they are subjected to another round of intensive testing as they try to maintain the new weight. The data generated by these experiments suggest that once a person loses about 10 percent of body weight, he or she is metabolically different than a similar-size person who is naturally the same weight.

The research shows that the changes that occur after weight loss translate to a huge caloric disadvantage of about 250 to 400 calories. For instance, one woman who entered the Columbia studies at 230 pounds was eating about 3,000 calories to maintain that weight. Once she dropped to 190 pounds, losing 17 percent of her body weight, metabolic studies determined that she needed about 2,300 daily calories to maintain the new lower weight. That may sound like plenty, but the typical 30-year-old 190-pound woman can consume about 2,600 calories to maintain her weight — 300 more calories than the woman who dieted to get there.

Scientists are still learning why a weight-reduced body behaves so differently from a similar-size body that has not dieted. Muscle biopsies taken before, during and after weight loss show that once a person drops weight, their muscle fibers undergo a transformation, making them more like highly efficient “slow twitch” muscle fibers. A result is that after losing weight, your muscles burn 20 to 25 percent fewer calories
during everyday activity and moderate aerobic exercise than those of a person who is naturally at the same weight. That means a dieter who thinks she is burning 200 calories during a brisk half-hour walk is probably using closer to 150 to 160 calories.

Another way that the body seems to fight weight loss is by altering the way the brain responds to food. Rosenbaum and his colleague Joy Hirsch, a neuroscientist also at Columbia, used functional magnetic resonance imaging to track the brain patterns of people before and after weight loss while they looked at objects like grapes, Gummi Bears, chocolate, broccoli, cellphones and yo-yos. After weight loss, when the dieter looked at food, the scans showed a bigger response in the parts of the brain associated with reward and a lower response in the areas associated with control. This suggests that the body, in order to get back to its pre-diet weight, induces cravings by making the person feel more excited about food and giving him or her less willpower to resist a high-calorie treat.

“After you’ve lost weight, your brain has a greater emotional response to food,” Rosenbaum says. “You want it more, but the areas of the brain involved in restraint are less active.” Combine that with a body that is now burning fewer calories than expected, he says, “and you’ve created the perfect storm for weight regain.” How long this state lasts isn’t known, but preliminary research at Columbia suggests that for as many as six years after weight loss, the body continues to defend the old, higher weight by burning off far fewer calories than would be expected. The problem could persist indefinitely. (The same phenomenon occurs when a thin person tries to drop about 10 percent of his or her body weight — the body defends the higher weight.) This doesn’t mean it’s impossible to lose weight and keep it off; it just means it’s really, really difficult.

What’s not clear from the research is whether there is a window during which we can gain weight and then lose it without creating biological backlash. Many people experience transient weight gain, putting on a few extra pounds during the holidays or gaining 10 or 20 pounds during the first years of college that they lose again. The actor Robert De Niro lost weight after bulking up for his performance in “Raging Bull.” The filmmaker Morgan Spurlock also lost the weight he gained during the making of “Super Size Me.” Leibel says that whether these temporary pounds became permanent probably depends on a person’s genetic risk for obesity and, perhaps, the length of time a person carried the extra weight before trying to lose it. But researchers don’t know how long it takes for the body to reset itself permanently to a higher weight. The good news is that it doesn’t seem to happen overnight.

“For a mouse, I know the time period is somewhere around eight months,” Leibel says. “Before that time, a fat mouse can come back to being a skinny mouse again without too much adjustment. For a human we don’t know, but I’m pretty sure it’s not measured in months, but in years.”
Personal Story Article:

The National Weight Control Registry tracks 10,000 people who have lost weight and have kept it off. “We set it up in response to comments that nobody ever succeeds at weight loss,” says Rena Wing, a professor of psychiatry and human behavior at Brown University’s Alpert Medical School, who helped create the registry with James O. Hill, director of the Center for Human Nutrition at the University of Colorado at Denver. “We had two goals: to prove there were people who did, and to try to learn from them about what they do to achieve this long-term weight loss.” Anyone who has lost 30 pounds and kept it off for at least a year is eligible to join the study, though the average member has lost 70 pounds and remained at that weight for six years.

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Bridge, who lives in Davis, Calif., was overweight as a child and remembers going on her first diet of 1,400 calories a day at 14. At the time, her slow pace of weight loss prompted her doctor to accuse her of cheating. Friends told her she must not be paying attention to what she was eating. “No one would believe me that I was doing everything I was told,” she says. “You can imagine how tremendously depressing it was and what a feeling of rebellion and anger was building up.”

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During the first years after her weight loss, Bridge tried to test the limits of how much she could eat. She used exercise to justify eating more. The death of her
mother in 2009 consumed her attention; she lost focus and slowly regained 10 pounds.

“It doesn’t take a lot of variance from my current maintenance for me to pop on another two or three pounds,” she says. “It’s been a real struggle to stay at this weight, but it’s worth it, it’s good for me, it makes me feel better. But my body would put on weight almost instantaneously if I ever let up.”

So she never lets up. Since October 2006 she has weighed herself every morning and recorded the result in a weight diary. She even carries a scale with her when she travels. In the past six years, she made only one exception to this routine: a two-week, no-weigh vacation in Hawaii.

She also weighs everything in the kitchen. She knows that lettuce is about 5 calories a cup, while flour is about 400. If she goes out to dinner, she conducts a Web search first to look at the menu and calculate calories to help her decide what to order. She avoids anything with sugar or white flour, which she calls her “gateway drugs” for cravings and overeating. She has also found that drinking copious amounts of water seems to help; she carries a 20-ounce water bottle and fills it five times a day. She writes down everything she eats. At night, she transfers all the information to an electronic record. Adam also keeps track but prefers to keep his record with pencil and paper.

“That transfer process is really important; it’s my accountability,” she says. “It comes up with the total number of calories I’ve eaten today and the amount of protein. I do a little bit of self-analysis every night.”

Bridge and her husband each sought the help of therapists, and in her sessions, Janice learned that she had a tendency to eat when she was bored or stressed. “We are very much aware of how our culture taught us to use food for all kinds of reasons that aren’t related to its nutritive value,” Bridge says.

Bridge supports her careful diet with an equally rigorous regimen of physical activity. She exercises from 100 to 120 minutes a day, six or seven days a week, often by riding her bicycle to the gym, where she takes a water-aerobics class. She also works out on an elliptical trainer at home and uses a recumbent bike to “walk” the dog, who loves to run alongside the low, three-wheeled machine. She enjoys gardening as a hobby but allows herself to count it as exercise on only those occasions when she needs to “garden vigorously.” Adam is also a committed exerciser, riding his bike at least two hours a day, five days a week.

Janice Bridge has used years of her exercise and diet data to calculate her own personal fuel efficiency. She knows that her body burns about three calories a minute during gardening, about four calories a minute on the recumbent bike and during
water aerobics and about five a minute when she zips around town on her regular bike.

“Practically anyone will tell you someone biking is going to burn 11 calories a minute,” she says. “That’s not my body. I know it because of the statistics I’ve kept.”

Based on metabolism data she collected from the weight-loss clinic and her own calculations, she has discovered that to keep her current weight of 195 pounds, she can eat 2,000 calories a day as long as she burns 500 calories in exercise. She avoids junk food, bread and pasta and many dairy products and tries to make sure nearly a third of her calories come from protein. The Bridges will occasionally share a dessert, or eat an individual portion of Ben and Jerry’s ice cream, so they know exactly how many calories they are ingesting. Because she knows errors can creep in, either because a rainy day cuts exercise short or a mismeasured snack portion adds hidden calories, she allows herself only 1,800 daily calories of food. (The average estimate for a similarly active woman of her age and size is about 2,300 calories.

The full article can be accessed via the following link:
http://www.nytimes.com/2012/01/01/magazine/tara-parker-pope-fat-trap.html?_r=2&pagewanted=all

Fact Sheet Article:

Obesity and overweight
Fact Sheet

Key facts
• Worldwide obesity has more than doubled since 1980.
• In 2008, 1.5 billion adults, 20 and older, were overweight. Of these over 200 million men and nearly 300 million women were obese.
• 65% of the world's population live in countries where overweight and obesity kills more people than underweight.
• Nearly 43 million children under the age of five were overweight in 2010.
• Obesity is preventable.
What are overweight and obesity?
Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health.

Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m²).

The WHO definition is:
• a BMI greater than or equal to 25 is overweight
• a BMI greater than or equal to 30 is obesity.

BMI provides the most useful population-level measure of overweight and obesity as it is the same for both sexes and for all ages of adults. However, it should be considered a rough guide because it may not correspond to the same degree of fatness in different individuals.

Facts about overweight and obesity
Overweight and obesity are the fifth leading risk for global deaths. At least 2.8 million adults die each year as a result of being overweight or obese. In addition, 44% of the diabetes burden, 23% of the ischaemic heart disease burden and between 7% and 41% of certain cancer burdens are attributable to overweight and obesity.

Some WHO global estimates from 2008 follow.
• 1.5 billion adults, 20 and older, were overweight.
• Of these 1.5 billion overweight adults, over 200 million men and nearly 300 million women were obese.
• Overall, more than one in ten of the world's adult population was obese.

In 2010, around 43 million children under five were overweight. Once considered a high-income country problem, overweight and obesity are now on the rise in low- and middle-income countries, particularly in urban settings. Close to 35 million overweight children are living in developing countries and 8 million in developed countries.

Overweight and obesity are linked to more deaths worldwide than underweight. For example, 65% of the world's population live in countries where overweight and obesity kill more people than underweight (this includes all high-income and most middle-income countries).

What causes obesity and overweight?
The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended. Globally, there has been:
• an increased intake of energy-dense foods that are high in fat, salt and sugars but low in vitamins, minerals and other micronutrients; and
• a decrease in physical activity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization.

Changes in dietary and physical activity patterns are often the result of environmental and societal changes associated with development and lack of
supportive policies in sectors such as health, agriculture, transport, urban planning, environment, food processing, distribution, marketing and education.

How can overweight and obesity be reduced?
Overweight and obesity, as well as their related noncommunicable diseases, are largely preventable. Supportive environments and communities are fundamental in shaping people’s choices, making the healthier choice of foods and regular physical activity the easiest choice, and therefore preventing obesity.

At the individual level, people can:
• limit energy intake from total fats;
• increase consumption of fruit and vegetables, as well as legumes, whole grains and nuts;
• limit the intake of sugars;
• engage in regular physical activity;
• achieve energy balance and a healthy weight.

Individual responsibility can only have its full effect where people have access to a healthy lifestyle. Therefore, at the societal level it is important to:
• support individuals in following the recommendations above, through sustained political commitment and the collaboration of many public and private stakeholders;
• make regular physical activity and healthier dietary patterns affordable and easily accessible to all - especially the poorest individuals.

The food industry can play a significant role in promoting healthy diets by:
• reducing the fat, sugar and salt content of processed foods;
• ensuring that healthy and nutritious choices are available and affordable to all consumers;
• practicing responsible marketing;
• ensuring the availability of healthy food choices and supporting regular physical activity practice in the workplace.

The full article can be accessed via the following link: