Weight-Control Effort and Responsibility for Weight in Obesity Stereotyping

by

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Abstract

The aim of this project was to investigate how negative stereotyping of obese individuals is influenced by information that they make efforts to control their weight, and whether this relationship is mediated by attributions of responsibility for weight. This research was conducted via online experiments and questionnaires. In Study 1 (N = 372), participants read a brief vignette about a fictional woman who was described as either obese or of healthy weight, who either did or did not claim to make efforts at controlling her weight. On the basis of this information alone, they were asked to rate her on a range of personal attributes and indicate the extent to which they thought she was responsible for her weight. They also completed questionnaires to assess their own characteristics and pre-existing attitudes to obesity. Study 2 (N = 391) replicated this procedure with weight-control effort presented as factual rather than claimed. In both studies, an obese woman was rated more negatively over a range of characteristics than a healthy-weight one, even when she made (or claimed to make) efforts to control her weight. Furthermore, the obese woman’s responsibility for her weight – which was greater when her weight was congruent with her effort to control it – was found to mediate relationships between body weight and obesity stereotyping. Specifically, lower weight-control effort was associated with greater perceived responsibility for her weight, and in turn more pejorative evaluations were made of her. This was found to be unrelated to the rater’s personal characteristics or attitudes to obesity. The indirect nature of this relationship may explain why stereotyping of obese individuals persists despite evidence that they attempt to control their weight. The results are discussed with regard to the attributional and justification-suppression models of prejudice.
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Chapter 1

Obesity Stigma: Findings, Theories, and Future Directions

1.1 The Problem of Obesity

Recent years have seen a dramatic increase in the rates of obesity in Western societies, including Australia (Booth et al., 2003; Haslam & James, 2005; WHO, 1999). Obesity may be defined loosely as an excess of body fat. In scientific research the most widely-used criterion of obesity is the Body Mass Index (BMI). If a person’s weight in kilograms divided by their height in metres squared is above 25, they are classified as ‘overweight’; if it is above 30, they are classified as ‘obese’. According to NHMRC (2003) guidelines for BMI, 25% of the adult Australians surveyed in the ABS’s 2007-08 National Health Survey were obese, and 37% were overweight. This continues the trend of steadily increasing rates of obesity in every age group since 1995 (ABS, 2009).

It seems that obesity is here to stay despite the efforts of individuals and governments. Dieting continues to be popular (Amigo & Fernandez, 2007), but is generally ineffective in producing significant, lasting weight losses among obese people (Bennet & Gurin, 1982; Mann et al., 2007; Miller, 1999; NIH, 1998), even when undertaken as part of an organized behavioural intervention (Garner & Wooley, 1991; Goodrick & Foreyt, 1991; Jeffery, Kelly, Rothman, Sherwood, & Boutelle, 2004). Wide-scale interventions and preventive efforts by governments across the world have either not been implemented, have not been tested, or have been found to be minimally effective (Catford & Caterson, 2003; Dolan et al., 2006; Lawlor & Chaturvedi, 2006; Swinburn, 2003).
1.2 Obesity Stigma: Definition and Existence

While obese people make up one quarter of the population, they are frequently the subject of social stigma. Stigma may be defined as prejudice toward members of a group that are perceived to possess some undesirable characteristic (Link & Phelan, 2001). The source of the stigma, whether it relates to a person’s body, character or culture, is viewed as deviant and discrediting; this can undermine their perceived value and individuality (Goffman, 1963). Stigma is closely linked to stereotypes – often-negative generalisations about members of certain groups, and discrimination – the resulting differential treatment of such people on the basis of their group membership. Research on social stigma has addressed prejudice on the basis of race, gender, sexual preference, intelligence, mental illness, unemployment, disability, disease, addiction, and other experiences such as child abuse, step-parenting and Vietnam War syndrome, to name a few (Link & Phelan; Menec & Perry, 1998; Weiner, Perry, & Magnusson, 1988).

Obesity represents a highly-visible deviation from weight norms that is stigmatised widely, and often openly, in Western society. No secret is made of the fact that excess weight is undesirable. The health risks of obesity are well-documented (Health Consequences, 2008; Jia & Lubetkin, 2005; Merton, 2010; National Task Force on the Prevention and Treatment of Obesity, 2000; Riley, 2005); the mass media is often used to promote social marketing campaigns aimed at preventing obesity (Cismaru & Lavack, 2007; Emery, Szczypka, Powell, & Chaloupka, 2007), and Australians are generally aware of what constitutes healthy eating (Hesketh, Waters, Green, Salmon, & Williams, 2005; Jones, Tapsell, Andrews, Williams, & Gregory, 2009). Slimness is regarded as highly
attractive (Rodin, 1993), and non-obese people readily admit their fear of excess fat. One quarter of school staff in a survey by Neumark-Sztainer, Story, and Harris (1999, p. 7) agreed that “one of the worst things that could happen to a person would be for him/her to become obese”; however, this may not necessarily represent disdain for fat people so much as awareness of the health consequences or the widely-documented stigma associated with obesity. Using a universal measure of bias, Latner, O'Brien, Durso, Brinkman, and MacDonald (2008) found that stigmatization of fat people is stronger than prejudice against Muslims and homosexuals. In a recent study, Schwartz, Vartanian, Nosek, and Brownell (2006) presented participants with hypothetical alternatives to obesity, and found that almost half of survey respondents indicated that they would sooner give up a year of their life than become obese; 15% were ready to surrender ten years to avoid becoming obese, and 25% of their sample found childlessness preferable to obesity. This greatly undermines the argument that obesity is undesirable primarily for its health consequences. Obese people are also aware of how undesirable their condition is; all of the morbidly obese participants in a study by Rand and MacGregor (1990) agreed that it was preferable to be normal-weight than to be an obese multi-millionaire.

Numerous researchers have set out to empirically demonstrate and explore the stigma of obesity, but before proceeding to describe major findings in the area, it is necessary to clarify the definition of ‘obesity’ used in the literature. Although the BMI cut-off of 30 provides an objective criterion for diagnosis, it is largely irrelevant to whether or not someone is perceived as having excess weight in the real world. Thus, as Puhl and Brownell (2003) did in their review of the sources of obesity stigma, this literature review will use the term ‘obesity’ to
denote excess weight rather than a BMI strictly above 30. Other terms that are frequently used in the literature to describe negative views toward obese people are ‘anti-fat bias’, ‘anti-fat prejudice’ and ‘anti-fat attitudes’ (Crandall & Biernat, 1990).

1.3 Reports of Stigma

Stigmatizing experiences have been reported as occurring frequently by obese people in many self-report studies. For example, 98% of respondents to a survey by the National Association to Advance Fat Acceptance (NAAFA) reported verbal harassment, criticism or teasing from family and friends. This figure was 75% for co-workers, 50% for supervisors and even 33% for health professionals (Rothblum, Brand, Miller, & Oetjen, 1989).

Stigmatization of health professionals by patients also occurs; overweight nurses in a qualitative study by Brown and Thompson (2007) reported that patients made rude comments about their weight. In a study by Puhl and Brownell (2006), 25% of overweight and obese participants reported differential treatment in the workplace. Despite the growing prevalence of obesity, a longitudinal study by Andreyeva, Puhl, and Brownell (2008) showed that self-reported rates of weight discrimination across various settings had significantly increased by 66% from 1996 to 2006. In a later article, the authors noted that the highest rates of experienced stigma (for example, among young white females) were comparable to rates of discrimination based on gender and race (Puhl, Andreyeva, & Brownell, 2008).

Other researchers have sought to illustrate the ways in which obesity stigma may manifest itself, and the settings in which it occurs; Carr and Friedman
(2005) observed that weight-based job discrimination is reported more commonly among professionals than among blue-collar workers. Myers and Rosen (1999) compiled a list of obese people's experiences of weight stigma, and found the most common to be children's hurtful comments, other people's negative assumptions, and physical barriers (such as chairs that are too small). All these factors and settings for discrimination were mentioned by obese Australian participants in Thomas, Hyde, Karunaratne, Herbert, and Komesaroff's (2008) qualitative study of the experience of obesity. Their most commonly reported source of weight-related comments were ‘strangers’, as also found in a survey by Falkner et al. (1999). Obese subjects in Puhl, Moss-Racusin, Schwartz, and Brownell’s (2008) qualitative study listed peers, friends and parents as the most frequent source of their ‘worst’ stigmatizing encounters. In several of these studies, frequency of reported discrimination increased with respondents' BMI (Carr & Friedman; Falkner et al.; Myers & Rosen; Puhl, Andreyeva, & Brownell, 2008; Puhl & Brownell, 2006). This effect was also found in Jasper and Klassen’s (1990) study of overweight salespeople; Roehling, Roehling, and Pichler’s (2007) large study of workplace discrimination; and Rothblum’s (1996) survey of Weight Watchers magazine subscribers, in which 40% reported verbal harassment by co-workers, and 25% expressed a desire to remain or become self-employed to avoid such experiences.

1.4 The Impact of Stigma

1.4.1 Extreme Methods of Weight-Loss

The survey responses described so far suggest that obesity is widely feared, and that people are prepared to go to great lengths to avoid it and its
associated stigma. One key example of such desperation in action is bariatric surgery. This involves modification of the gastrointestinal tract to limit food intake and absorption, and feelings of hunger (Victorian Government Department of Human Services, 2009). As a radical and expensive strategy for weight control, it is usually regarded as a last resort for the morbidly obese (BMI > 40; NHMRC, 2003); however, rates of bariatric surgery in Australia have grown 800% over the last decade (ABS, 2009). Besides advances in technique and technology, one of the factors that may motivate people to undergo bariatric surgery is a desire to escape stigma. Peace, Dyne, Russell, and Stewart (1989) observed that social motivations for bariatric surgery exceed health motivations. Gastric bypass patients in a study by Rand and MacGregor (1990) reported experiencing prejudice frequently, and for 84% this amounted to a desire not to be seen in public. After substantial weight loss post-surgery, all subjects reported reduced discrimination. In the case of bariatric surgery, the experience of obesity stigma motivates people to take extreme measures to lose weight, but this raises the question of what other emotional consequences may be experienced by those who cannot afford or do not qualify for surgery.

As with bariatric surgery, the feelings of desperation that weight stigma provokes are illustrated by findings that adolescents who experience teasing about their weight are more likely to engage in risky, disordered methods of dieting such as diet pills, skipping meals and taking laxatives (Neumark-Sztainer et al., 2002), and are less likely to exercise at school (Bauer, Yang, & Austin, 2004, Faith, Leone, Ayers, Moonseong, & Pietrobelli, 2002; Storch et al., 2007). Similarly, Rosenberger, Henderson, and Grilo (2006) observed a correlation between stigmatising experiences and exercise avoidance among obese female
candidates for bariatric surgery, while Vartanian and Shaprow (2008) found this correlation to be present among female college students. In this case, the avoidance of exercise suggests that protection from social stigma takes priority over attempts to change one’s stigmatised status by losing weight. But both goals are sought desperately: many of the obese adults in Thomas et al.’s (2008) study described how pressure to lose weight had driven them to extreme methods of dieting. Half of the sample listed negative psychological consequences of their obesity and its associated stigma, such as eating disorders, isolation, depression and low self-esteem, and how experiences of teasing about their weight in childhood had a lasting emotional impact.

1.4.2 Psychological Consequences

Puhl and Heuer’s (2009) review cites many studies on the psychological correlates and consequences of weight stigma. Stigmatising experiences, such as weight-based teasing, have been found to be associated with depression and depressive symptoms, as well as eating-disorder symptoms such as binge-eating and eating restraint, often even after controlling for demographic factors, physical disability, BMI and age of onset of obesity. This is true even in cases where the teasing occurred during childhood (e.g. Annis, Cash, & Hrabosky, 2004; Jackson, Grilo, & Masheb, 2000; Jackson, Grilo, & Masheb, 2002; Rosenberger, Henderson, Bell, & Grilo, 2007). Among overweight children, low self-esteem and feelings of shame have been found to increase sharply with age, as children are exposed to ridicule and exclusion from peers due to their weight (Puhl & Brownell, 2001). The key role of stigma – rather than obesity itself – in undermining mental health is illustrated by studies by Myers and Rosen (1999), Carr and Friedman (2005) and Friedman et al. (2005), who observed a correlation
between frequency of stigmatizing experiences and poor psychological adjustment, as indicated by symptoms of mental illness, body dissatisfaction and low self-esteem. This correlation persisted even after controlling for weight, and has also been observed among children and adolescents (Storch et al., 2007).

Despite these reports of psychologically scarring prejudice, many studies have found no difference when comparing obese and non-obese people on standardized measures of mental health and emotional well-being. The two groups frequently obtain similar scores on measures of general self-esteem, psychological distress, quality of life, subjective well being and social relationships (Crocker & Major, 1989; Dierk et al., 2006; French, Story, & Perry, 1995; Friedman & Brownell, 1995; Jarvie, Lahey, Graziano, & Framer, 1983; Miller & Downey, 1999; Miller, Rothblum, Brand, & Felicio, 1995; Sarlio-Lahteenkorva, 2001; Stunkard & Wadden, 1992). Crocker and Major suggest that there is no consistent discrepancy because obese people use coping strategies to protect their self-esteem. This explanation was also proposed by Puhl and Brownell (2006), when their large-scale study of the experience of obesity stigma found no correlation between frequency of stigmatizing experiences and psychological adjustment.

Numerous coping methods used to deal with obesity stigma are described by Puhl and Brownell (2003a). While it is beyond the scope of this literature review to describe them all, as a telling contrast to losing weight through bariatric surgery, one such means of alleviating distress is eating for comfort (Degher & Hughes, 1999). Obese participants in studies by Thomas et al. (2008), Puhl and Brownell (2006), and Puhl, Moss-Racusin, Schwartz, and Brownell (2008) listed eating as both a means of coping with emotional issues, and in some cases as an
explanation for their obesity. Similarly, all the obese participants in Grant and Boersma’s (2005) qualitative study identified comfort during times of stress as one of the functions of food. Several studies have observed positive relationships between the experience of weight-based teasing and binge-eating among adolescents (Haines, Neumark-Sztainer, Eisenberg, & Hannan, 2006; Jackson et al., 2000; Neumark-Sztainer et al., 2002). While the direction of causality could run both ways, the association between stress and unhealthy eating habits is well-documented (Cartwright et al., 2003; Greeno & Wing, 1994; Ng & Jeffery, 2003). Such emotional eating has been identified as a threat to dieting success (Blair, Lewis & Booth, 1990; Grilo, Shifman, & Wing, 1989; Kayman, Bruvold, & Stern, 1990; Puhl & Heuer, 2009; Sarlio-Lahteenkorva, 1998). Thus, obesity stigma can be understood as detrimental to both the mental and physical health of obese people.

1.5 Traits Attributed via the Stigma

Many researchers have investigated the nature of obesity stigma, and so far the literature paints an unflattering picture of the stereotypes society holds about obese people. When asked to describe obese people on the whole, about one quarter of teachers and school staff surveyed by Neumark-Sztainer et al. (1999) responded that they had ‘different personalities’ to thin people: they were considered emotional, untidy, unsuccessful, and susceptible to family problems. Undergraduates in a study by Tiggemann and Rothblum (1988) rated fat people in general as warmer and friendlier than thin people; however, they were also described as relatively less attractive, more self indulgent, less self-disciplined and lazier. Fat women especially were perceived as less happy and less self-
confident than thin women. Sandberg (2007) studied 1,925 Swedish newspaper articles concerning obesity, and concluded that they were laden with stigmatising descriptors such as ‘stupid’, ‘ugly’, ‘naïve’, ‘lazy’, ‘irresponsible’, ‘greedy’, ‘without manners’, ‘repugnant’ and ‘parasites’.

When Puhl, Moss-Racusin, Schwartz, and Brownell (2008) asked their obese participants what stereotypes they felt society held, they listed – and largely decried as untrue – such characteristics as ‘prone to overeating’, and ‘lacking intelligence, willpower and personal hygiene’. But the most commonly perceived stereotype was the belief that obese people are lazy. Indeed, such a belief has been observed among a large sample of online respondents (Schwartz et al., 2006) as well as health professionals who treat obesity (Bocquier et al., 2005; Fogelman et al., 2002; Foster et al., 2003; Schwartz, Chambliss, Brownell, Blair, & Billington, 2003), nurses (Garner & Nicol, 1998; Maroney & Golub, 1992; Petrich, 2000) and medical students (Chambliss, Finley, & Blair, 2004; Magliocca, Jabero, Alto, & Magliocca, 2005; Puhl, Wharton, & Heuer, 2009).

Other research into the prejudices of doctors and health professionals who have had experience with obese patients – even dieticians – has revealed that across the world, such people are not unbiased. Noncompliance is a recurring theme in their reports of obese patients (Brown, 2006; Campbell & Crawford, 2000; Campbell, Engel, Timperio, Cooper, & Crawford, 2000; Foster et al., 2003; Hoppe & Ogden, 1997), but they also describe them as having poor hygiene, being hostile, dishonest (Klein, Najman, Kohrman, & Munro, 1982), unattractive, slow, insecure, inactive (Puhl et al., 2009), indulgent, lacking in willpower, compensating for lack of love or attention, having family and emotional problems (Maiman, Wang, Becker, Finlay, & Simonson, 1979), and lacking in self-control.
(Price, Desmond, Krol, Snyder, & O’Connell, 1987), self-esteem, health and sexual attractiveness (Harvey & Hill, 2001; Harvey, Summerbell, Kirk, & Hill, 2002). Similarly, nurses described obese people as lacking self-control and exhausting to care for (Culbertson & Smolen, 1999; Petrich, 2000), as well as overindulgent, lazy, lacking self-confidence, susceptible to unresolved anger, and less successful than non-obese people (Maroney & Golub, 1992). PE teachers in a study by Greenleaf and Weiller (2005) reported lower expectations of their obese students: not only regarding physical fitness, but also intelligence and social competence.

A study by Blumberg and Mellis (1980) revealed that stereotypes become stronger, and more negative, with increasing BMI of the target. Medical school students described moderately obese persons as significantly more sad, ugly, awkward and weak, while morbidly obese persons were described in all these terms as well as worthless, bad, unpleasant and awful. The adjectives listed here are only a selection of the negative traits widely accepted as characteristic of the typical obese person.

Despite the widespread endorsement of these perceptions about obese people, it appears that they are not grounded in reality. Roehling, Roehling, and Odland (2008) checked the validity of stereotypes – by examining whether BMI is correlated with personality traits – and found minimal to no relationships.

1.6 Scales to Measure Prejudice

Several scales used to measure anti-fat bias also give an indication of popular stereotypical perceptions. Crandall's (1994) Anti-Fat Attitudes scale includes such generalisations as untrustworthiness, low intelligence, and lack of
willpower. The factor structure of Allison, Basile, and Yuker’s (1991) Attitudes Toward Obese Persons scale includes three major perceptions about obese people: that they have different personalities to normal-weight people, that they experience and cause social problems, and that they have low self-esteem.

Robinson, Bacon, and O’Reilly's (1993) Fat Phobia Scale is a measure of general perceptions about fat people. Commonly-endorsed stereotypes were perceptions that fat people are undisciplined, inactive, unappealing and have emotional or psychological problems.

1.7 Implicit Anti-Fat Bias

While there is ample evidence that people are prepared to express belief in obesity stereotypes, research on implicit bias suggests that anti-fat attitudes can exist even without conscious awareness. Implicit attitudes toward obese people are typically measured using the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), a timed, Stroop-like task that involves categorising words (e.g. Chambliss et al., 2004; Schwartz et al., 2003, Schwartz et al., 2006; Teachman & Brownell, 2001; Teachman, Gapinski, Brownell, Rawlins, & Jeyaram, 2003). It was originally developed to tap into implicit social prejudice, such as gender and race stereotyping, and is based on the assumption that a faster reaction time to stereotypical categories implies unconscious endorsement of such stereotypes. Teachman et al. used pictorial and verbal versions of the IAT to identify implicit beliefs among students and the general population, that obese people are lazy, stupid and worthless. Implicit bias was found to be more prevalent and consistent than explicit bias on the same dimensions. Likewise, other studies have found low explicit bias but substantial implicit bias among
health professionals specialising in obesity treatment (Schwartz et al., 2003; Teachman & Brownell) and among exercise science students (Chambliss et al.). The relevance of such implicit attitudes for predicting behaviour was demonstrated in a study by Bessenoff and Sherman (2000). Implicit negativity towards obese people was found to predict seating distance from an obese student, whereas explicit bias did not. This is consistent with theories based on racism research that link implicit attitudes to spontaneous, non-verbal behaviour such as smiling, while explicit attitudes predict more deliberate actions such as ratings (Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Fazio, Jackson, Dunton, & Williams, 1995). It may be that explicit, rather than implicit, attitudes are more responsible for the widespread discrimination against obese people that has been documented in the literature.

1.8 Discrimination in Real Life

Discrimination is the behavioural consequence of negative attitudes to fat, and plenty of examples of its occurrence in a naturalistic setting have been documented in the literature. Extensive reviews by Puhl and Brownell (2001) and Puhl and Heuer (2009) describe discrimination against obese people in health, employment, and educational settings. They cite numerous economic studies from across the world, indicating that on average, obese people – especially women – earn lower wages for the same work, are less likely to advance to higher positions than the non-obese, and have higher rates of unemployment, even after controlling for health and socioeconomic factors. They list court cases in which obese employees claim to have been unfairly fired due to their weight, and
describe a study by Melville and Cardinal (1997) in which physical educators admitted to using weight as a criterion when hiring.

Numerous studies discussed in the reviews reveal that a large proportion of physicians and medical students are reluctant to discuss weight and weight-loss strategies with obese patients. A clear theme that pervades research in this area is GPs’ doubt regarding both their own knowledge in the area, and how effective they would be in promoting weight loss. Due to the common perception of obese patients as noncompliant, doctors view seeing such patients as “a greater waste of their time” (Hebl & Xu, 2001, p. 1250), and “professionally unrewarding” (Campbell et al., 2000, p. 459). Other studies have found that the majority of obese people have experienced stigma from medical professionals (Anderson & Wadden, 2004; Puhl & Brownell, 2006; Rand & MacGregor, 1990), and accordingly do not seek their doctor's help with their weight. Even nurses are unwilling to discuss weight with patients, seeing such topics as uncomfortable (Wright, 1998) and unlikely to be of benefit to patients who lack motivation (Hoppe & Ogden, 1997; Mercer & Tessier, 2001). Even when satisfied with their own GPs, the majority of obese participants interviewed by Brown, Thompson, Tod, and Jones (2006) expressed anticipation of stigma when accessing health services. Accordingly, across a number of U.S. studies, a tendency has been found for obese patients to avoid doctors whenever possible, even if this means missing or delaying preventive examinations (Ferrante et al., 2006; Fontaine, Faith, Allison, & Cheskin, 1998; Mitchell, Padwal, Chuck, & Klarenbach, 2008; Olson, Schmuaker, & Yawn, 1994; Ostbye, Taylor, Yancy, & Krause, 2005; Wee, McCarthy, Davis, & Phillips, 2000). Pelvic examinations in particular provoke a great deal of embarrassment in obese women (Amy, Aalborg, Lyons, & Keranen,
2006), and this in turn leads to doctors’ reluctance to perform such examinations (Adams, Smith, Wilbur, & Grady, 1993). Doctors surveyed by Amy et al. also expressed dissatisfaction with their access to bariatric equipment necessary to accommodate larger patients. Puhl and Heuer (2009) cite a telling study on derogatory humour among medical students and physicians, identifying obese patients as the most common target of ridicule (Wear, Aultman, Varley, & Zarconi, 2006). Perhaps most surprising of all these examples of weight discrimination in health care settings was a study by Campbell and Crawford (2000) which found that only 33% of Australian dieticians believed that they were effective in treating obesity.

With regard to college attendance, the reviews by Puhl and colleagues also described studies that revealed lower rates of parental financial support, and thus college admission, of obese people – especially women. Average levels of educational attainment are lower for both obese men and obese women, especially at schools and colleges where average BMI of students is lower. This difference persists across studies, even after controlling for socioeconomic variables. Puhl and Heuer’s (2009) explanation suggesting that discrimination is responsible for the lower educational attainment of obese people was supported by evidence of negative attitudes from both teachers and peers.

Puhl and Heuer (2009) describe a bevy of research that highlights the prevalence of weight bias in the media. Overweight characters on North American television are presented less frequently and far more negatively than their thin counterparts; they are often the targets of ridicule (sometimes from themselves), and they tend to reinforce stereotypes such as those already described. The authors conclude that TV is a contributing factor to prejudice,
citing research that has identified a relationship between TV viewing and children’s negative attitudes to fat people. Weight-loss advertising and news articles concerning obesity were also listed as a source of more pointed stigma and stereotypically negative portrayals of overweight individuals.

Other studies on real-life weight discrimination have demonstrated that people are less likely to comply with the requests of an obese person than the requests of a non-obese person; landlords more frequently deny them property rental (Karris, 1977), and students are more likely to refuse to assist them in handing out questionnaires (Rodin & Slochower, 1974). Overweight undergraduates are less likely to be in dating relationships than are thin undergraduates (Sheets & Ajmere, 2005; Harris, Walters, & Waschull, 1991). There is no doubt that discrimination such as this occurs primarily on the individual level, and attitudes surveys can only reveal so much. Many researchers have also set out to study how general obesity stigma is applied to obese individuals.

1.9 Anti-Fat Attitudes Among Obese People

1.9.1 Explicit Anti-Fat Attitudes Among Obese People

The negative views that give rise to weight discrimination are so ingrained in our society that even overweight people have been found to express them. While other stigmatised groups, such as racial minorities, often exhibit ‘in-group bias’ – holding higher regard for, and giving preferential treatment to, fellow group members over and above other groups (Brewer, 1979; Tajfel, 1970) – obese participants in a study by Rudman, Feinberg, and Fairchild (2002) actually indicated a preference for non-obese people. Overweight women in an experiment
by Crocker, Cornwell, and Major (1993) who perceived that they had experienced weight discrimination, did not condemn the person who had mistreated them; instead, they viewed the discrimination as reasonable. Numerous studies have concluded that obese people can be both the target and the source of obesity stigma; the correlation between a person’s BMI and various measures of their anti-fat attitudes is often nonsignificant or very modest (e.g. Berryman, Dubale, Manchester, & Mittelstaedt, 2006; Chambliss et al., 2004; Crandall, 1994; Crandall & Biernat, 1990; Harris, 1983; Harris, Waschull, & Walters, 1990; Hebl, Ruggs, Singletary, & Beal, 2008; Klaczynski, Goold, & Mudry, 2004; Latner et al., 2008; Maiman et al., 1979; Neumark-Sztainer et al., 1999; Puhl et al., 2009; Quinn & Crocker, 1999), even in children (Counts, Jones, Frame, Jarvie, & Strauss, 1986; Kraig & Keel, 2001; Tiggemann & Anesbury, 2000). Findings are mixed, however; some studies have observed a negative relationship between BMI and explicit obesity stigma (Morrison & O'Connor, 1999; Schwartz et al., 2006).

1.9.2 Implicit Anti-Fat Attitudes Among Obese People

Overweight participants have sometimes demonstrated less implicit endorsement of obesity stereotypes than healthy-weight participants, but this still amounts to significant associations between words such as ‘fat’ and ‘lazy’ (Chambliss et al., 2004; O’Brien, Hunter, Halberstadt, & Anderson, 2007; Schwartz et al., 2006; Wang, Brownell, & Wadden, 2004). Internalization of stereotypes occurs in other stigmatised groups (Allport, 1954; Meyer, 1995, 2003), and Joanisse and Synnott (1999) suggest that obese people are no exception.
1.9.3 Predictors of Anti-Fat Attitudes Among Obese People

In some cases, dislike for and negative stereotyping of obese people has been found to be predicted by dissatisfaction with one’s own weight (Bagley, Conklin, Isherwood, Pechiulis, & Watson, 1989; Pepper & Ruiz, 2007). Vartanian, Herman and Polivy (2005) devised a measure of internalisation of societal views of thinness and fatness, and found it to be related to explicit anti-fat attitudes. Several of the obese subjects in Puhl, Moss-Racusin, Schwartz, and Brownell’s (2008) qualitative study even went so far as to express the view that weight stigma could best be reduced by individual weight-loss rather than societal change.

Although they do not always challenge the validity of society’s stereotypes, there is evidence that obese people may wish to avoid conforming to them. The stereotype-threat literature describes the tendency for individuals to become anxious when put in a situation where they risk behaving in accordance with a negative stereotype (Spencer, Steele, & Quinn, 1999; Steele & Aronson, 1995). In situations such as academic tests or sports, this anxiety can impair performance, much like a self-fulfilling prophecy. So far, only one study has investigated stereotype threat in relation to obesity. Using telephone interviews, Seacat and Mickelson (2009) found that overweight women who were primed to think about weight-related stereotypes reported lower levels of exercise and dietary efficacy, and personal health intentions than did a non-primed control group of overweight women. The authors inferred that fear of appearing ‘fat and lazy’ undermined subjects’ confidence in their ability to perform future health behaviours. In other cases, obese people may become defensive, attributing their
obesity to uncontrollable – or at least socially acceptable – causes (Degher & Hughes, 1999; Hughes & Degher, 1993).

1.10 Judgments of Obese Individuals

1.10.1 Vignette Studies

Numerous researchers have conducted experimental studies to investigate whether and how people apply obesity stereotypes when making judgments of individuals. Typically, in such studies, participants are presented with a short passage – a vignette – describing one or more fictional (target) people, at least one of whom is said to be overweight. Sometimes, to maintain ecological validity, participants are led to believe that the targets described in the vignettes are real (Bell & Morgan, 2000; DeJong, 1993; Hebl & Mannix, 2003; Hebl & Xu, 2001; O’Brien et al., 2008; Sigelman, 1991; Wigton & McGaghie, 2001). DeJong (1980) went so far as to tell participants that they were about to meet the person described in the vignette. Based on what they have read, participants are then asked to rate these characters on various dimensions. Often, the targets only differed in weight (and sometimes gender for the sake of generalisability); thus, any discrepancies in participants' judgments can be said to be due to weight. In a study by Jasper and Klassen (1990), participants even explicitly explained that their judgments about fictional target individuals were based on weight.

The results of such studies accord with findings on the prevalence of general obesity stigma. When people are given a single target, rather than being asked to judge obese people on the whole, stereotypes and discrimination still flourish. Usually, the dimensions on which participants rate a target are specific to the context in which they are described.
1.10.2 In a Workplace Setting

Often, the setting for vignettes is a fictional workplace, and targets are job applicants or candidates for promotion. The majority of these studies use undergraduates as participants, and they have found that obese targets are almost always at a disadvantage in simulated hiring decisions, despite otherwise identical qualifications or performance (e.g. Kennedy & Homant, 1984; Klesges et al., 1990; Larkin & Pines, 1979; Pingitore, Dugoni, Tindale, & Spring, 1994). Participants express less desire to work with obese targets (Decker, 1987; Jasper & Klassen, 1990; Klassen, Jasper, & Harris, 1993); assign them lower starting salaries (O'Brien et al., 2008) and less-important positions (Bellizzi, Klassen, & Belonax, 1989); and describe them as less neat, productive, ambitious, disciplined, and determined (Larkin & Pines, 1979), less likely to succeed (O'Brien et al.), and lower on supervisory potential, professional appearance and personal hygiene (Rothblum, Miller, & Garbutt, 1988). Hebl and Mannix (2003) found that mere proximity to an overweight woman was enough to hamper a male job applicant's chances of success. One exception to this trend of unmitigated negativity was a study by Gapinski, Schwartz, and Brownell (2006), in which obese job applicants received higher ratings than their non-obese counterparts on work-related measures, despite being liked less on a personal level.

1.10.3 In a Medical Setting

Similar stereotyping occurs in a fictional medical setting. When participants are doctors, nurses or medical students, the targets are usually presented as patients. Participants are asked about their emotional and behavioural responses to such patients, as well as their perceptions about them, in terms of compliance, and the perceived usefulness of providing them with weight loss
therapy or advice. Hypothetical clients’ weight influenced the provisional diagnoses and anticipated treatment outcomes of psychologists in a study by Davis-Coelho, Waltz, and Davis-Coelho (2000), which highlights the risk of bias in medical settings. As in the case of general judgments, obese individuals are often assumed to be less compliant (Hebl & Xu, 2001; Puhl et al., 2009; Wigton & McGaghie, 2001; Young & Powell, 1985). Despite essentially identical descriptions, physicians in Hebl and Xu's study also described obese patients as worse at taking care of themselves, less self-disciplined, and less appealing to help. Mental health workers were more likely to assign them negative psychological symptoms (Young & Powell), dieticians assumed they had poorer diet quality (Puhl et al.), medical students saw them as more depressed (Wigton & McGaghie), psychologists rated them as more embarrassed (Agell & Rothblum, 1991), and both nurses and rehabilitation counselling students rated them as less socially attractive (Kaplan, 1981; Peternelj-Taylor, 1989). Some of these descriptions may be based on experience, rather than prejudice, but they nonetheless become expectations which influence future interactions with obese patients.

1.10.4 In a Social Setting

Other vignette studies in a purely social context also provide evidence that people readily apply negative stereotypes to obese individuals. Participants in a study by Regan (1996) rated an obese woman as less sexually attractive and responsive than a normal-weight woman. Perceptions of unattractiveness are commonly applied to obese targets in such studies (Clayson & Klassen, 1989; Hebl et al., 2008; Wigton & McGaghie, 2001) as are characteristics such as self-indulgence, laziness, unhappiness, and low self-discipline (Tiggemann &
Rothblum, 1988). Obese targets are given lower ratings on indicators of social aptitude such as popularity, sociability and general likelihood of success in both relationships and careers (Hebl et al.). Weiner et al. (1988) and Menec and Perry (1998) asked about participants' likelihood of offering assistance or charitable donations to individuals with various stigmata, including obesity. Although participants in both studies indicated a relative reluctance to do so, evidence has been found that obese people are not always regarded with complete disdain; participants in a study by Teachman et al. (2003) expressed empathy toward obese characters who had experienced various forms of discrimination.

1.10.5 Among Children

Children and teenagers also express obesity stigma on an individual level. When describing hypothetical obese peers, they endorse such terms as mean (Cramer & Steinwert, 1998), sad (Counts et al., 1986), stupid, ugly, lazy and 'having few friends' (Brylinski & Moore, 1994; Wardle, Volz & Golding, 1995). Children are often questioned about their liking, or desire for friendship with various fictional target children, and in all studies, an obese child is always preferred less than a normal-weight child (DeJong, 1980; Goldfield and Chrisler, 1995; Latner & Stunkard, 2003; Richardson, Goodman, Hastorf, & Dornbusch, 1961; Sigelman, 1991; Tiggeman & Anesbury, 2000). Obese children are seen as less desirable peers with whom to share social, academic and sporting activities (Bell & Morgan, 2000; Cramer & Steinwert). Tiggeman and Anesbury extended knowledge of children's anti-fat prejudice by asking their young participants about adult targets. They found that obese adults were stereotyped similarly to obese children; both were seen as lazy, and less attractive, confident, happy, hard-working and healthy than their normal-weight counterparts.
1.10.6 Methodological Issues

Researchers do not always rely on written descriptions alone when researching applied obesity stigma. Sometimes the description is combined with a photograph (DeJong, 1980; Hebl & Mannix, 2003; Kaplan, 1981; Young & Powell, 1985), or a video is used instead (Larkin & Pines, 1979). Children's fictional peers are almost always presented visually, sometimes as silhouettes (Brylinsky & Moore, 1994; Goldfield & Chrisler, 1995; Tiggeman & Anesbury, 2000), as drawings (Cramer & Steinwert, 1998; Holub, 2008; Latner & Stunkard, 2003; Richardson et al., 1961; Wardle et al., 1995), in photographs (Counts et al., 1986), or as actors in videos (Bell & Morgan, 2000; DeJong, 1993).

Interestingly, Rothblum et al. (1988) found physical attractiveness in visual materials to be a potential confound. When photographs of obese and non-obese fictional job applicants were matched on facial attractiveness, very little stereotyping and discrimination occurred, and they concluded that it may not be obesity itself, but rather, its impact on physical attractiveness, that is responsible for negative reactions to obese job applicants. As a solution to this, some studies ensure facial appearance is not visible (Klesges et al., 1990) or is held constant using padded clothing (Bell & Morgan, 2000; Pingitore et al., 1994; Wigton & McGaghie, 2001) or digitally-morphed photos (Hebl et al., 2008). In such studies, obesity stigma persists even when targets do not differ in attractiveness.

Although such experimental studies have demonstrated that people make negative judgments about individuals on the basis of obesity alone, their relevance to actual behaviour is questionable. Several researchers have acknowledged this weakness, and included measures that suggest that anti-fat attitudes influence behaviour to a lesser extent than they influence scale ratings.
In a simulated workplace, Klassen et al.’s (1993) participants were unbiased in some of their work decisions – for example, severity of punishment for undesirable behaviour – despite expressing less liking and desire to work with obese employees. Weight did not influence care delivery or test and treatment ordering by psychologists (Agell & Rothblum, 1991), nurses (Peternelj-Taylor, 1989), or medicine students (Wigton & McGaghie, 2001), who all expressed negative attitudes to such patients. While these findings call into question the relevance of demonstrating obesity stigma in settings where professional standards of behaviour may limit its influence, the evidence for unfair (or inferior) treatment of obese individuals in those very settings has already been discussed, and remains a concern for future research. Self-presentation concerns, such as a desire not to appear unprofessional, may go some way towards explaining a failure to demonstrate weight-based discrimination on paper. Such inferences suggest that future research may benefit from the use of implicit measures when investigating whether – and how – obesity stereotypes are applied to individuals.

As has already been discussed, implicit measures of prejudice have been found to predict actual behaviour more reliably than explicit ones (Bessenoff & Sherman, 2000; Poehlman, Uhlmann, Greenwald, & Banaji, 2004). Despite this, measures of unconscious prejudice, such as the IAT, have only been used to study stereotypes of obese people in general, rather than people’s judgments of obese individuals.
1.11 The Role of Attributions of Responsibility

1.11.1 Perceived Controllability of Weight

It is a widespread perception that each person is individually responsible for his or her own weight. The majority of a sample of Australian adults agreed that weight is within a person's control (Crawford & Campbell, 1998), and other surveys on attitudes to obesity have established that obese people are held responsible for their weight (e.g. Clayson & Klassen, 1989; Crandall, 1994; Crandall and Biernat, 1990; Crandall & Cohen, 1994; Crandall & Martinez, 1996; Menec & Perry, 1998; Teachman et al., 2003; Weiss, 1980). As with illnesses, the perceived cause implies the perceived cure (Ogden & Jubb, 2008). Obesity is seen as deserved, controllable, and reversible through effort; a ‘mental-behavioural stigma’, in the same class as AIDS, child abuse and drug abuse (Weiner et al., 1988). Although teachers in a study by Neumark-Sztainer, et al. (1999) admitted that genetics did play a role in determining a person's body weight, almost all schoolchildren in a study by Tiggeman and Anesbury (2000) expressed belief that obesity is controllable. Majority agreement with a lifestyle explanation for obesity has been observed among fitness professionals (Hare, Price, Flynn, & King, 2000), nurses (Brown & Thompson, 2007; Hoppe & Ogden, 1997), and doctors across the world (Bocquier et al., 2005; Epstein & Ogden, 2005; Foster et al., 2003; Harvey & Hill, 2001). Dieticians hold their obese clients responsible for their weight (Campbell & Crawford, 2000), and even apply this perceived controllability to themselves (McArthur & Ross, 1997).

The extent that society holds fat people accountable for their weight is also evident in the media. Surveys of U.S. newspapers and television have observed that for decades, obesity has been presented solely as a failing of
individuals, and that societal explanations have appeared only recently (Kim & Willis, 2007; Lawrence, 2004). Similarly, in Australia, the majority of TV news and current affairs shows frame obesity as an individual responsibility due to poor nutrition (Bonfiglioli, Smith, King, Chapman, & Holding, 2007).

This simplified presentation conflicts with research that has described the influence and interaction of genetics and environment in determining body weight (Barsh, Farooqi, & O'Rahilly, 2000; Keesey & Hirvonen, 1997; Wadden, Brownell, & Foster, 2002). Genetics are known to play a significant role in obesity, explaining 25%-40% of the variance in BMI (Bouchard, 1994; Price, 2002). This percentage is disproportionate to the media attention and individual blame apportioned to the lifestyle causes of obesity.

Obese people, on the other hand, are more likely to cite the uncontrollable causes of their obesity (Degher & Hughes, 1999; Ogden et al., 2001), while being fully aware of the blame society places on them (Thomas et al., 2008). While several of the obese participants in Puhl, Moss-Racusin, Schwartz, and Brownell’s (2008) qualitative study accepted responsibility for being overweight, a greater proportion denied responsibility and stated that society is wrong to blame them. Their most common suggestion to reduce the stigma they experience from other people was to educate the public about the uncontrollable nature of weight.

1.11.2 The Attributional Model of Obesity Stigma

The attributional model of stigma is the most widely-researched theory with regard to obesity. Put simply, the response to another's distress depends upon the perceived cause. Where the person is held responsible for their negative outcome, they elicit less pity and sympathy (Reisenzein, 1986), and less desire to
help (Piliavin, Rodin, & Piliavin, 1969) than if they were not seen as responsible. Groups are rated more positively when people view their condition as the result of misfortune or biology, and more negatively when it is seen as a consequence of personal failings. Although the application of the term 'attribution theory' is relatively recent, the idea that anti-fat attitudes are due to judgments of responsibility was suggested very early on, by Maddox, Back, and Liederman (1968), and later, by Dyrenforth, Wooley, and Wooley (1980). Furthermore, discrimination on the basis of blame appears to be regarded as acceptable; medical students in Wear et al.'s (2006) study openly admitted that their denigration of obese patients is based on the assumption that they are responsible for their condition. This perspective is supported by a large body of survey and experimental research.

### 1.11.3 Attributions and General Anti-Fat Prejudice

Many surveys on anti-fat attitudes have inquired about beliefs about responsibility and the controllability of weight, and these answers have almost always correlated significantly with measures of prejudice toward obese people. Crandall's (1994) widely-used Anti-Fat Attitudes (AFA) scale shows a reliable correlation between the 'Dislike' and 'Willpower' subscale; indicating prejudice against fat people and belief that weight is controllable respectively. Other scales by Allison et al. (1991) have shown similar results. Indeed, the positive relationship between anti-fat bias and controllability beliefs has emerged across numerous studies, measures (Crandall and Martinez, 1996; Crandall & Moriarty, 1995; Hilbert, Rief, & Braehler, 2008; Menec & Perry, 1998; Klaczynski et al., 2004; Puhl, Schwartz, & Brownell, 2005; Tiggemann and Rothblum, 1997; Weiner et al., 1988), and populations: obese people (Allison et al.), and
schoolchildren (Tiggeman & Anesbury, 2000). Chambliss et al. (2004) also observed the correlation between weight locus of control and implicit measures of prejudice; specifically, those who believed weight to be controllable were more prepared to – implicitly – apply the 'lazy' stereotype to obese people. After surveying anti-fat bias across cultures, Crandall et al. (2001) observed that in individualist societies, attributions of responsibility interact with a negative cultural view of fat to create prejudice. This is in perfect accord with attribution theory; in order for a group to be denigrated, their stigma must be perceived as a negative outcome, and they must be perceived as responsible for bringing it upon themselves.

Additional support for the notion that anti-fat prejudice is due to a focus on the controllable causes of obesity, comes from another correlation frequently observed in the literature. Across numerous studies, health professionals with less education tend to express more prejudiced attitudes toward obese people. Among nurses, more positive attitudes to obese patients are predicted by years of professional education (Bagley et al., 1989) and years of nursing experience (Culbertson & Smolen, 1999). Among doctors, those who expressed such positive attitudes were more likely to subscribe to medical journals (Bocquier et al., 2005), and among medical students, those who felt ill-prepared to treat obese patients were more likely to view obesity as behaviourally-caused (Block, DeSalvo, & Fisher, 2003). Older (and thus more experienced) mental health workers in a study by Young and Powell (1985) were less likely than their younger counterparts to assign negative psychological symptoms to obese patients; similarly, younger psychologists in a study by Davis-Coelho et al. (2000) were more pessimistic about the effort and prognosis of obese patients. Even in a large
population survey, education in general shows a negative correlation with anti-fat attitudes (Hilbert et al., 2008). However, such an effect may depend upon the causes of obesity emphasised by the context and curriculum; among physical education students, number of years of education predicted increased endorsement of anti-fat attitudes and the belief that obesity indicates a lack of willpower (O'Brien, Hunter, & Banks, 2007). Thus, lack of awareness of – or lack of belief in – the uncontrollable causes of obesity may hinder health professionals’ ability to remain unprejudiced when dealing with obese patients.

1.11.4 Attributions and Prejudice Against Obese Individuals

The key role of controllability beliefs in creating anti-fat prejudice has also been established with regard to individuals. This is generally done by measuring people's attitudes toward fictional obese characters who either do or do not have a medical reason for their obesity. Participants' evaluations of obese targets are almost always more negative when they do not have an excuse (e.g., a gland problem) compared to those who do (DeJong, 1980; DeJong, 1993; Menec & Perry, 1998; Musher-Eizenman, Holub, Miller, Goldstein, & Edwards-Leeper, 2004; Weiner et al., 1988; Weiss, 1980). An exception to this was observed by Sigelman (1991). She found that among schoolchildren, providing a medical explanation for a target child’s obesity resulted in lower attributions of responsibility, but no change in negative perceptions when compared to an obese peer with no explanation. This parallels results by Anesbury and Tiggemann (2000), who presented general information on the uncontrollable nature of weight, and obtained a similar reduction in schoolchildren’s attributions of responsibility – but not stereotyping – of obese peers. Bell and Morgan (2000) found that a medical explanation only increased liking of an obese peer among younger
children. Older children became even more reluctant to share academic activities with such a target – perhaps because their obesity was perceived to be more stable. However, these findings appear limited to the schoolyard – the relationship between blame and dislike appears reliable in adults.

Rodin, Price, Sanchez and McElligot (1989) observed that the influence of perceived controllability of weight extends to judgments about those who ridicule obese people. After reading a scenario in which an obese person was discriminated against, participants attributed more prejudice to the source of the discrimination when the obesity was said to be outside the victim's control. These findings suggest that people view weight discrimination as more acceptable when its target 'deserves' to be obese.

1.11.5 The Role of Attributions in Modifying Prejudice

If judgments about obese individuals hinge on perceptions of controllability of weight – which can be modified – it would be logical to extend this opportunity for intervention to judgments about obese people as a group. Indeed, numerous researchers have attempted to modify attitudes to obese people in general, by providing participants with information emphasising either controllable or uncontrollable causes of obesity. Findings are mixed.

There is no doubt that beliefs about the causes of a problem can be modified; Ogden and Jubb (2008) successfully changed participants' views on the causes of obesity by providing them with a vignette which described a single case with either genetic or environmental etiology. Participants' beliefs about the best treatment for obesity in each case changed accordingly. Observations of individuals' experience also appears sufficient to influence general beliefs about causality: after showing normal-weight subjects 'before and after' diet
advertisements, and measuring their attitudes, Geier, Schwartz, and Brownell (2003) concluded that such advertisements increase anti-fat prejudice by convincing viewers that weight is controllable. Similarly, Latner, Ebneter and O’Brien (2012) observed greater general dislike for obese people among participants who had read a vignette describing a target individual who had lost weight, compared to those who had read about a weight-stable target. Providing information suggesting that obesity is largely due to controllable factors has also tended to increase implicit and explicit prejudice and blame toward obese people (Lewis, Cash, Jacobi, & Bubb-Lewis, 1997; O’Brien, Puhl, Latner, Mir, & Hunter, 2010; Puhl et al., 2005; Teachman et al., 2003).

Puhl et al. (2005) and O’Brien et al. (2010) observed that the relationship works both ways – that negative attitudes can be likewise improved by providing participants with information describing uncontrollable causes of obesity. However, these findings do not accord with the results of Teachman et al. (2003), who found that information manipulations were only effective in worsening prejudice. Their participants did not improve their attitudes to obese people following exposure to low-controllability information. Hegarty and Golden (2008) found that manipulating attributional beliefs had no effect on attitudes to fat people on the whole, whereas Crandall (1994), Hague and White (2005), and Robinson et al. (1993) successfully reduced blame and anti-fat attitudes by educating participants about uncontrollable causes of obesity.

While these latter three studies were conducted in a laboratory, such descriptions as they used have often been just one part of educational interventions in a naturalistic context aimed at improving the attitudes of people who work with obese individuals. Although medical students in a study by Wiese,
Wilson, Jones and Neises (1992) acknowledged the role of genetic and biological factors in causing obesity, they still endorsed negative 'lazy' stereotypes. An intervention that focused on educating them about the uncontrollable causes of obesity and cultivating empathy toward obese patients was successful in reducing negative attitudes and also attributions of responsibility for obesity. A similar reduction in blame and anti-fat attitudes was observed following an intervention among kinesiology students; despite this, the 'laziness' stereotype remained intact (Rukavina, Li, & Rowell, 2008). These interventions are not always successful (Ogden & Hoppe, 1998), and depend upon the time taken and quality of the teaching.

Taken together, the studies that have examined the role of blame and controllability in determining attitudes to obese people support the attributional model of stigma. In the absence of detailed information on an obese target's dietary or exercise habits (and in some cases, despite it; see Puhl et al., 2009), people infer that obesity is due to overeating and inactivity. They attribute it to a failure of willpower and perceive it – and any associated discrimination – as a just fate. A medical reason for obesity seems to interrupt that process, thus excusing the target, or the group as a whole, from the blame and judgment apportioned to the 'deservingly obese'.

1.12 Other Theories of Obesity Stigma

1.12.1 Social Consensus

Other explanations and processes have been proposed to underlie obesity stigma. Drawing from the literature on racism, Puhl et al. (2005) suggest the 'social consensus' model (Stangor, Sechrist, & Jost, 2001), in which negative
attitudes to obese people are held because these attitudes are perceived to be normative – widely endorsed – especially if they come from a valued in-group. Puhl et al. obtained some support for this theory: participants reduced their anti-fat bias when they were told that others held more favourable views, but, in an interesting twist, they did not increase their bias when they were told that others held less favourable views. Reading others' views about the inaccuracy of obesity stereotypes caused participants to reduce their endorsement of such stereotypes, but to a lesser extent than reading the same information presented as facts. This is consistent with the social consensus explanation, as facts are almost universally endorsed as true. Zitek and Hebl (2007) found that attitudes to obese people can become significantly more or less favourable after simply hearing a stranger expressing their own attitudes in either direction. Social consensus appears to have a significant degree of influence over obesity stigma, and may interact with attributions, such that people perceive it to be socially acceptable to hold others responsible for their weight in the absence of evidence to the contrary.

1.12.2 Justification-Suppression

Crandall and Eshleman (2003) proposed the 'justification-suppression' model of prejudice (JSM), which Hegarty and Golden (2008) specifically extended to weight prejudice. Rather than agreeing that attributions of responsibility lead to stigma, the JSM asserts that such attributions are merely used to justify existing, 'gut-level' prejudice which has been suppressed. Hegarty and Golden’s research has supported this explanation; they found that manipulating controllability beliefs had no impact on attitudes toward obese people (among other stigmatised groups). They also observed that, regardless of whether participants had been educated on the controllable or non-controllable
causes of obesity, those who had initially reported more prejudice produced more thoughts that obesity is controllable than did those who reported less prejudice. While these findings lend some support to the JSM, they conflict with the existing research that has successfully changed attitudes by manipulating attributions. Also, the study did not include a manipulation check to see whether attributions had actually changed following exposure to the information about controllability. Nevertheless, as Hegarty and Golden advise, the possibility of bidirectional feedback between attributions and attitudes may be a little-studied component of the attributional process.

1.13 The Role of Belief in a Just World

1.13.1 Belief in a Just World and Prejudice

Akin to the 'deserved' prejudice proposed by the attributional model is Belief in a Just World. This construct was first described by Lerner (1965), and refers to the need to perceive the world as a predictable place, where good and bad outcomes are the result of good and bad behaviour respectively. Belief in a Just World (BJW) is a component of a related system of values: the Protestant Work Ethic (Weber, 1958). Despite the name, this does not refer to religious attitudes. Those who endorse the Protestant Work Ethic (PWE) believe in the legitimacy of authority, and value productivity, hard work, delay of gratification, conservation of resources, and limits to leisure time (Furnham, 1990). Belief in a just world is integral to this future-oriented attitude; one must trust that the world is fair and one's efforts will be rewarded in order to commit to long-term goals (Lerner & Miller, 1978). As a consequence, these two phenomena affect how outcomes are interpreted. People who hold BJW, or subscribe to the PWE tend to
view those who succeed positively, while those who fail are blamed for their failure (Lerner, 1980). Accordingly, these attitudes are associated with an internal locus of control (Furnham, 1987; Lied & Pritchard, 1976; MacDonald, 1971; Mirels & Garrett, 1971; Waters, Bathis, & Waters, 1975). Thus, it is intuitively reasonable to conclude that maintaining one's belief that the world is fair – that hard work is rewarded and laziness is punished – provides the motivation for attributing a target's weight to their diet and exercise habits.

Several researchers have demonstrated a positive association between anti-fat attitudes, and both BJW and the PWE. Indeed, those who subscribe to these viewpoints are more inclined to prejudice against various stigmatized groups (Biernat, Vescio, Theno, & Crandall, 1996; Katz & Hass, 1988; Kinder & Sears, 1981), and tend to rely on attractiveness in making judgments of others (Dion & Dion, 1987). Most of the existing research on BJW has focused on responses to another's misfortune: when it is 'undeserved', people who express strong BJW or endorsement of the PWE tend to blame the victim to a greater extent than those who score lower on these measures (e.g. Mudrack, 2005; for a recent review, see Furnham, 2003, or Hafer & Begue, 2005).

Obese people are no exception to the groups stigmatised by those who strongly believe that the world is fair. People who hold BJW view weight as controllable, and they blame obese people for their weight and derogate them (Crandall & Biernat, 1990; 1996; Quinn & Crocker, 1999). Obesity represents a situation in which 'deservingness' is often ambiguous – depending on age and genetics – and a strong BJW may allow people to draw certain conclusions at the expense of accuracy. As with anti-fat attitudes, BJW and PWE endorsement have
been found to be unrelated to one's own body weight (Crandall, 1994; Quinn & Crocker, 1999).

### 1.13.2 Belief in a Just World Among Obese People

The fact that obese people can still view the world as fair raises the question of whether the PWE and BJW affect how people judge themselves. Research has found that people readily apply their BJW to their own unfair outcomes. Generally, this serves a protective function. Hafer and Olson (1989) found that those high in BJW perceived negative outcomes as more fair than those low in BJW. Hagedoorn, Buunk, and Van de Vliert (2002) found that only among those who believe strongly in a just world could a favourable outcome prevent perceptions of injustice caused by a biased procedure – and vice versa. Likewise, Hafer and Correy (1999) found that students’ internal attributions for their own negative outcomes were predicted by BJW, and that they reduced negative emotions associated with unfairness. Dalbert (2002) found BJW to predict less anger, less negative emotions and more positive emotions after recalling an anger-provoking event. BJW was also positively related to self-esteem. Lipkus and Siegler (1993) found that people who held strong BJW were less likely to feel like they were victims of discrimination. Indeed, the sense of control afforded by an internal locus of control is associated with higher psychological well-being (e.g., Miller & Seligman, 1975; Taylor & Brown, 1988; Warren & McEachren, 1983). Ball, Klebe, Trevino, and Sims (1994) found that employees with high BJW perceive punishments more positively. Dalbert (1998) found that among real victims – unemployed women and women with a disabled child – BJW was positively related to life satisfaction and negatively related to rumination. BJW
has been shown to be most effective in maintaining perceived justice when an outcome is neither clearly fair nor unfair (Hafer & Olson).

While it makes sense that BJW is associated with attributions of responsibility for others’ weight, each person's knowledge of their own weight-control habits would theoretically leave less room for the influence of bias. The scant research that has investigated this topic suggests otherwise: that obese people may indeed see excess weight as a deserved punishment, and experience negative emotions accordingly. Quinn and Crocker (1999) found lower-than-average subjective well-being among participants who both perceived themselves as overweight and endorsed the PWE. Yet the rigid adherence to such a belief system – to the point of self-denigration – seems counterintuitive given the difficulty of weight loss and weight maintenance. Feedback undoubtedly exists between the outcomes one experiences in life, and whether the world is viewed as just. As suggested by Lerner (1980), BJW may decrease when a person is confronted by injustice numerous times. Likewise, persistent or extreme obesity (possibly despite great effort to lose weight) may lead people to view life as generally unfair. And yet, BJW and PWE are unrelated to BMI. One possibility is that some obese people who believe in a just world see their weight as fair, but maintain their sense of justice by viewing it as a positive or neutral outcome (especially with regard to attractiveness). Another explanation centres around the distinction proposed by Lerner and Miller (1978), between personal and general BJW. According to this theory, it is possible for a person to view others' outcomes as just, but their own outcomes as unfair – or vice versa. This would permit obese people to excuse themselves from the category of the 'deserving fat', while still applying it to others. More evidence is needed before any definite conclusions can
be drawn. In their review of coping strategies used to deal with obesity, Puhl and Brownell (2003a) call for more research on the role of just world beliefs in coping with one’s own obesity.

1.13.3 Undeserved Good Fortune

One further question that has emerged from the just-world literature is how people respond to positive outcomes. Mudrack (2005) proposed the distinction between a need to believe that misfortune is deserved, and a need to believe that good fortune is deserved. Interestingly, among Mudrack's subjects, only deserved misfortune was found to correlate positively with authoritarianism and the PWE. Thus, it would be interesting to see whether people generalise their just-world attributions to the slim, and rate them as energetic, health-conscious and admirable based on weight alone. A study by Ellard and Bates (1990) found that high-BJW subjects rated their own character more positively when they had been unjustly assigned positions of superiority or prestige. Answering this question would inform the literature on thin idealization, the complement to obesity stigma.

1.13.4 Moralization of Health Behaviour

The relationship between obesity stigma, blame and BJW can be situated within the broader issue of the moralization of health behaviour. This sociological trend was described by Vanden Heede, Pelican, Holmes, Moore and Buchanan (2006), who pointed out that in today's secular society, unhealthy behaviours (such as overeating or smoking), or a failure to look after one's health, are widely viewed as tantamount to sin. Weight remains one of the last visible criteria by which a person's character may be judged. This goes some way towards explaining why obesity stereotypes frequently relate to character rather than
weight-control behaviours – for example, ‘mean’ (Brylinsky & Moore, 1994; Harris & Smith, 1983), ‘disagreeable’ (Roehling, 1999), ‘hostile’, and ‘dishonest’ (Klein et al., 1982). It also provides a means by which obese adherents to the PWE and BJW may avoid self-condemnation; by being confident, from their own behaviour, that they are an exception to the weakness or moral inferiority ascribed to obese people. Besides acts of altruism, religious observance or general pleasantness, this may be achieved through alternative health behaviours, such as vegetarianism, yoga, vitamin supplements, or abstaining from cigarettes. Such an approach may be easier than questioning the validity of the prevailing stereotype, but it may also hinder weight loss, as obese just-world believers may pursue moral superiority rather than a healthy diet. As yet, this possibility remains unresearched.

1.14 Other Relevant Characteristics of the Stigmatiser

1.14.1 Body Mass Index

The literature is peppered with findings – often conflicting findings – on other participant variables that influence the presence and expression of anti-fat attitudes. As already discussed in Section 1.9, body mass index does not show a consistent relationship with various measures of weight prejudice. In some cases, obese people appear less biased; in others, they do not differ from non-obese people. Holub (2008) suggested that one's own perception of one’s body size may be a more reliable predictor of anti-fat attitudes than actual body size; this was indeed the case with her preschool participants. Similarly, Allison et al. (1991) asked their adult participants to report their subjective weight, and found that people who perceive themselves as slim have more positive attitudes to obese
people than do those who perceive themselves as fat. The fact that body size perceptions are often inaccurate (McCabe, Ricciardelli, Sitaram, & Mikhail, 2006) may offer an explanation for such contradictory findings on weight stigma and BMI.

### 1.14.2 Body Dissatisfaction

A related construct is dissatisfaction with one's body, as it takes account of both perceived weight and its distance from a person's ideal weight. Several studies with adults have included measures of body dissatisfaction alongside anti-fat attitudes, and they have likewise observed significant positive relationships between the two (Bagley et al., 1989), even in the absence of a relationship between BMI and anti-fat attitudes (Lewis et al., 1997; O’Brien, Hunter, & Banks, 2007), or the presence of an inverse one (Pepper & Ruiz, 2007). However, studies by Neumark-Sztainer et al. (1999) and Schwartz et al. (2006) found no relationship between anti-fat prejudice and satisfaction with one's own weight, suggesting that this relationship cannot necessarily be relied upon. Body dissatisfaction has also been found to correlate with the belief that weight is a matter of willpower (O’Brien, Hunter, Halberstadt, & Anderson, 2007; Pepper & Ruiz, 2007). In a study by Klaczynski et al. (2004), body esteem predicted belief in the controllability of participants' own weight, but it was unrelated to beliefs about the causes of obesity, and anti-fat attitudes. It is possible that it is not the dissatisfaction, per se, but the overall concern with one’s weight that stimulates anti-fat attitudes; O’Brien, Hunter, Halberstadt, and Anderson found an even stronger correlation between dislike of fat people, and the tendency to compare one's appearance with others; more specifically, O'Brien et al. (2009) found that it
was a tendency to make downward appearance comparisons which predicted anti-fat attitudes.

1.14.3 Dieting

The belief that excess weight represents a failure of willpower, and the tendency to make appearance comparisons both reflect the concerns of dieters, and hence it may be supposed that anti-fat prejudice is rife among dieters. As O'Brien et al. (2009) suggested, these may both be pressures that motivate people to attempt weight loss. Few studies have directly compared the prejudice of dieters with non-dieters, although Pepper and Ruiz observed higher levels of anti-fat attitudes among participants who reported high levels of eating concern. On the other hand, Neumark-Sztainer et al. (1999) found no relationship between anti-fat attitudes and weight loss practices. This topic deserves further attention in future studies.

1.14.4 Age

Basic demographic variables have not shown a consistent relationship to anti-fat attitudes either. Some studies have observed less blame and more positive attitudes toward obese people among older participants than younger ones (Hebl et al., 2008; Najman, Klein, & Munro, 1982; O'Brien, Hunter, & Banks, 2007; Rand & Wright, 2000; Robinson et al., 1993; Schwartz et al., 2003; Young & Powell, 1985), while others have found no difference (Maiman et al., 1979; Pepper & Ruiz, 2007; Schwartz et al., 2006; Teachman et al., 2003), and occasionally a positive relationship between age and weight prejudice (Foster et al., 2003; Hilbert et al., 2008). Among children, the existing research suggests that such prejudice increases with age (Brylinsky & Moore, 1994; Counts et al., 1986; Cramer & Steinwert, 1998; Lawson, 1980; Lerner & Korn, 1972; Sigelman,
Miller, & Whitworth, 1986; Wardle et al., 1995), and levels off after late childhood (Stager & Burke, 1982). The nature of the prejudice changes too; Sigelman (1991) observed a greater likelihood of victim blaming among younger children, while Cramer and Steinwert (1998) found that as children grow older, they focus less on height and physical capability, and more on weight and appearance when assessing potential playmates. Other researchers have not observed any difference in the anti-fat bias of older and younger children (Tiggemann & Anesbury, 2000; Tiggemann & Wilson-Barrett, 1998), and in some cases, have found prejudice to decrease with age (Latner, Stunkard, & Wilson, 2005; Powlishta, Serbin, Doyle, & White, 1994; Rand & Wright, 2000, 2001). When it comes to the experience of stigma, there is a strong trend for people to report having been the victim of less discrimination as they grow older. This is true for various types of discrimination including obesity stigma (Carr & Friedman, 2005; Puhl, Andreyeva, & Brownell, 2008; Puhl & Brownell, 2006). This may be due to society's increasing sensitivity to such issues, and hence the greater acceptability of reporting such occurrences among younger people. It is unlikely that this trend is related solely to a high prevalence of expressed anti-fat bias in school settings; the majority of obese participants in Puhl, Moss-Racusin, Schwartz, and Brownell’s (2008) study reported adults as being the perpetrator of their worst stigmatising experience. In regard to the stigmatizer, research by Hebl et al. suggests that obesity’s negative influence on attractiveness ratings decreases over the lifespan. It remains a goal of future research to investigate the factors which may prevent anti-fat attitudes from worsening with age, at both the societal and individual level.
1.14.5 Gender

Many studies include participants' gender, often to use as a covariate in analyses. As a result, there is a great deal of evidence regarding gender differences in anti-fat prejudice. Findings continue to be mixed, possibly due to the wide variety of measures used, but the majority of studies have observed more negative attitudes to fat and fat people among males (Chambliss et al., 2004; Chen & Brown, 2005; Crandall, 1994; Crandall et al., 2001; Foster et al., 2003; Glenn & Chow, 2002; Latner et al., 2005; Lewis et al., 1997; Morrison & O’Connor, 1999; O’Brien, Hunter, Halberstadt, & Anderson, 2007; Perez-Lopez, Lewis & Cash, 2001; Puhl et al., 2005; Teachman & Brownell, 2001; Wang et al., 2004).

Other researchers have found females to be more biased (Allison et al., 1991; Crandall & Biernat, 1990; Garner & Nicol, 1998; Harris, Harris, & Bochner, 1982; Maiman et al., 1979; Robinson et al., 1993; Young & Powell, 1985), and still others found no difference at all (Klaczynski et al., 2004; Rand & Wright, 2001; Schwartz et al., 2003; Schwartz et al., 2006; Teachman et al., 2003).

Results have also been mixed with implicit measures; some have found no differences between males and females (O’Brien et al.; Teachman et al., 2003), and others have found females to be more biased (Chambliss et al., 2004), even when the genders show no difference on explicit measures (Schwartz et al., 2003).

The majority of studies that measure children's anti-fat attitudes have found minimal or no gender differences (Brylinsky & Moore, 1994; Cramer & Steinwert, 1998; Hill & Silver, 1995; Stager & Burke, 1982; Tiggemann & Anesbury, 2000; Tiggemann & Wilson-Barrett, 1998; Wardle et al., 1995), although sometimes girls express more negative attitudes than boys (Richardson et al., 1961; Sigelman et al., 1986). In terms of the experience of stigma, the
evidence suggests that women are more frequently stigmatized than men (Bellizzi et al., 1989; Carr & Friedman, 2005; Chen & Brown, 2005; Puhl, Andreyeva, & Brownell, 2008; Puhl & Brownell, 2001; Regan, 1996; Roehling, 1999; Roehling et al., 2007; Tiggemann & Rothblum, 1988).

1.14.6 Fear of Becoming Fat

Morrison and O'Connor (1999) suggest that results showing higher bias in female subjects may be due to women’s fear of becoming fat themselves, rather than a genuine negativity toward fat people. They caution that measures designed to assess anti-fat attitudes should maintain the distinction between these two constructs, as Crandall’s (1994) AFA does by using separate 'dislike' and 'fear of fat' subscales. More research is needed regarding the qualitative nature of gender differences in obesity stigma; it is a possibility that weight is simply more salient to women. Tiggemann and Rothblum (1988) observed that among female participants, there was a greater difference between ratings of fat and thin targets than among male participants. They also observed gender differences in the adjectives used to describe the targets, as did Chambliss et al. (2004), Chetwynd, Stewart, and Powell (1974), and Young and Powell (1985). Studies with children have also suggested that the relationship between anti-fat attitudes and gender is a complex one. Kraig and Keel (2001) observed similar anti-fat attitudes among both genders, but greater pro-thin bias among girls. Among children in a study by Tiggeman and Wilson-Barrett (1998), levels of weight stereotyping were similar across gender, but only correlated with body dissatisfaction for girls. Powlishta et al. (1994) found that when presented with a drawing of an overweight peer of the same gender, girls were more likely to reject her as a playmate, while boys tended to attribute more negative traits to him. Thus, the evidence so far suggests that
from childhood onwards, gender exerts significant influence over the valence, nature and expression of obesity stereotypes. More research is needed to explore the possibility that gender’s influence on anti-fat prejudice may be mediated by gender differences in fear of becoming fat.

1.14.7 Social Characteristics

Other social correlates of anti-fat attitudes have emerged from the literature. Conservative political views have been found to predict bias against fat people (Crandall, 1994; Crandall & Biernat, 1990; Crandall et al., 2001; Crandall & Schiffhauer, 1998; Morrison & O’Connor, 1999), possibly because they are often held by people who endorse the Protestant work ethic and believe in a just world (Furnham & Bland, 1982; Furnham et al., 2001; Joe, 1974; MacDonald, 1971). Anti-fat attitudes also tend to be higher among people who express other forms of prejudice, such as homophobia (Morrison & O’Connor, 1999) and racism (Maroney & Golub, 1992). The research indicates that people with strong anti-fat bias tend to be less educated (Hilbert et al., 2008), Caucasian (Chambliss et al., 2004; Jackson & McGill, 1996; Parnell et al., 1996; Thompson, Sargent, & Kemper, 1996), and raised in a less populated area (Chambliss et al.). Findings by Schwartz et al. (2006) conflict with this evidence. They found that weight prejudice was unrelated to race and education on both implicit and explicit measures. Their findings on this issue are dubious, however, because their sample was large, but not culturally diverse (85% white). In a smaller sample that was purposefully diverse, Crandall et al. (2001) found that attitudes are influenced strongly by a person's culture and the value it places upon weight. As discussed in relation to social consensus theory (see Section 1.12.1), the perceived attitudes of
others are highly influential in determining the attitudes people report (Puhl et al., 2005), and this is undoubtedly a function of the culture in which one lives.

An interesting correlation emerged between socio-economic status (SES) and anti-fat attitudes; women with a high SES were more likely to dislike fat people than were those with a low SES (Allison et al., 1991). This relationship was only found among women, and the authors note that it reflects the lower prevalence of obesity among women – but not men – of a higher SES. The era in which we live also seems to influence our attitudes: Latner and Stunkard (2003) found that obesity stigma among children was more prevalent in 2001 than in 1961, despite the fact that obesity has steadily increased with time.

Taken together, the unclear relationships between obesity stigma and the various participant variables that may influence it serve to illustrate two points. First is the value of including such measures, both to use as correlates and to assist in exploring and resolving the contradictions between different studies. Secondly, the ambivalence of these results suggests that the factors discussed in the preceding paragraphs are less important in influencing attitudes than are other variables more proximal to the rating or judgment being made. The next section will outline key gaps in the literature regarding factors which may determine how fat people are judged.

1.15 The Need for Research on Individual Weight-Control Behaviour

So far, the obesity stigma literature has largely neglected one of the most obvious determinants of how obese individuals are judged: knowledge of their actual weight-control effort. Despite the demonstrated relevance of blame and perceived laziness to weight stereotyping, only one vignette study has clearly
presented participants with concrete information about the dietary habits of the
target. Puhl et al. (2009) asked dietetics students to evaluate the health status and
treatment potential of obese and normal-weight patients. Their intake of energy,
fat, fruit and vegetables and fibre were described, but did not vary between
targets. Interestingly, participants still rated the obese patients as having a poorer
diet, suggesting that stereotypical beliefs can override other evidence. Future
research could further explore this hypothesis by varying obese and non-obese
targets' diet and exercise behaviour, rather than only providing a medical
explanation for obesity from which to infer targets' responsibility for their weight.
Perhaps the closest approximation to this kind of study was conducted by King et
al. (2006). While assessing naturalistic weight discrimination among sales clerks
in a shopping mall, obese confederates posing as customers experienced more
interpersonal discriminatory behaviour when they carried a high-calorie beverage
and claimed not to diet or exercise than they did when they carried a diet beverage
and claimed to be on a diet and have recently completed a half-marathon.

King et al.'s (2006) method presents more direct evidence of weight-
control effort than does the medical-explanation paradigm; however, the same –
and more – could be accomplished within a vignette. Findings in such a study
would be especially relevant to real-life situations in which an obese person's
weight-control behaviour (or lack thereof) is visible and known. This need is
highlighted by Puhl, Moss-Racusin, Schwartz, and Brownell’s (2008) finding that
obese people frequently experience the worst stigma from peers, friends and
family. In the case of ongoing relationships, a person's entire dieting history may
be known, and will no doubt exert substantial influence over how lazy or
unhealthy they are perceived to be. Thus, future studies will offer a clearer insight
into whether prejudice against fat people is based on weight itself, or the unhealthy diet and lack of exercise that excess weight has come to imply.
Chapter 2

Study 1: The Role of Claimed Weight-Control Effort in Stereotyping of Obese People

2.1 Introduction

While much is known about the prevalence and nature of obesity stigma, few researchers have considered the impact of an obese person's weight-control behaviour on how they are judged by others. The present study investigated how stereotyping of an obese individual is influenced by information that she does or does not make an effort to control her weight.

Obesity stigma may be defined as prejudice toward people with excess body fat. A component of this prejudice is stereotyping: often-negative generalisations about people based on group membership. Stereotyping has been a major focus of survey and experimental research into obesity stigma, and negative traits such as laziness, unattractiveness, unhappiness and self-indulgence have been found to be attributed to obese people as a group (see Section 1.5). Similar negative judgments are also readily applied to fictional ‘target’ individuals who are described and/or depicted as obese in vignettes, photos, drawings or videos (see Section 1.10).

The attributional model of stigma posits that these perceptions occur because obese people are seen as responsible for their weight, and thus deserving of stigma (see Section 1.11.2). Their excess body weight is taken as evidence that they lack self-control.

In accordance with the attributional model, reducing attributions of responsibility seems to reduce prejudice. Several researchers achieved this by
providing participants with information emphasising the biological determinants of weight. Similarly, fictional obese individuals are evaluated less negatively when their weight can be explained by a medical condition (see Section 1.11.5).

So far, providing a medical explanation for obesity has been the primary means of reducing stigma towards obese individuals in experimental studies. The problem with this paradigm is that it requires participants to infer that, in the absence of a medical reason, an individual’s obesity is due to their eating habits. A study by Puhl et al. (2009) actually provided direct information about the diet of an obese target. Dietetics students rated hypothetical patients who were obese as having poorer diets than those who were healthy-weight, despite being given identical information about their energy and macronutrient intakes. However, a problem with this method lies in the ecological validity of how the targets’ diet was presented. While dieticians may be used to evaluating detailed nutritional information, people in their everyday interactions are rarely informed so clearly – or asked to think so deeply – about others’ eating and weight-control behaviour. Less-objective information about a target’s eating habits was provided in a study by King et al. (2006). They found that obese confederates posing as customers experienced more interpersonal discrimination from sales clerks when they claimed not to diet or exercise, and drank from an ice-cream beverage, than they did when they claimed to diet and exercise, and drank a diet beverage.

The present study extended King et al.’s (2006) naturalistic presentation of targets’ weight-control behaviour to the vignette/evaluation paradigm typically used to assess obesity stigma towards individuals, among a more general sample than Puhl et al.’s (2009) dietetics students. Participants were asked to make judgments about a fictional individual, described in a vignette, who varied in
weight (obese or healthy-weight), and who claimed to either make an effort to control her weight, or make no effort. This reflects real-life situations in which evidence of others’ weight management behaviour is often limited to their own assertions. In other respects, the study’s methodology and measures were comparable to studies in which a target’s medical explanation for obesity was used to reduce stereotyping.

An obese person’s claim that they do diet and exercise would presumably interrupt the attribution of responsibility hypothesized to underlie stigmatisation, while still giving biased evaluators the opportunity to discount such information as untrue. The attributional model would be supported by a finding that an obese individual’s weight-control effort protects them from negative weight stereotyping, via reduced attribution of responsibility for their weight.

Characteristics of the person making the judgment have also been found to influence obesity stereotyping, and may determine how effort information is interpreted. For this reason, the present study also measured participants’ beliefs and attitudes previously found to be relevant to the expression of stigma.

Belief in a Just World (BJW; Lerner, 1965) is the need to perceive life as fair, and good or bad outcomes as deserved. People who hold BJW tend to view those who succeed positively, while blaming those who fail (Lerner, 1980). Likewise, they are more inclined to blame and express prejudice toward various stigmatized groups, including obese people (see Section 1.13.1). As it is often unclear – and subjective – whether or not obese individuals deserve their obesity, an unanswered question is whether those who believe in a just world will alter their judgments in response to information suggesting that an obese person works hard to lose weight. It may be that those with strong BJW will view obese
individuals negatively regardless of their apparent efforts to lose weight. BJW could also be challenged by presenting a target who remains slim despite making no weight-control effort.

Findings are mixed on how other characteristics of the stigmatiser influence judgements of obese people. Positive, negative and nonsignificant relationships have been found between anti-fat bias and numerous variables, including BMI, body dissatisfaction, dieting, age, gender, fear of becoming fat, and general attitudes and beliefs about obesity (see Section 1.14). The mixed nature of these findings suggests that these characteristics are less important than are other variables more specific to the rating or judgment being made. However, such measures should be included in obesity stigma research to resolve inconsistencies and assess – or control for – their influence.

It was the aim of Study 1 to measure how obesity stereotyping is affected by the interaction between a target's weight and weight-control effort, and whether this depends on participant characteristics: age, gender, BMI, body dissatisfaction, self-esteem, dieting status, eating restraint, general attitudes to fat and fat people, and BJW.

It was predicted that an obese target would be rated more negatively along dimensions that commonly feature in stereotypes, such as laziness and unhappiness. However, this negative weight stereotyping would be reduced, if not eliminated, in cases where the target claimed to put a great deal of effort into controlling her weight. It was also predicted that obesity stereotyping would be stronger, and unmitigated by effort information, among participants who expressed more general dislike for fat people, believed that weight is due to willpower, or expressed BJW.
2.2 Method

2.2.1 Sample Recruitment

The study was approved by the Deakin University Human Ethics Advisory Group. Data were collected by means of an online survey. It was open to people of both genders, aged over 18, in all countries. Internet access and a basic level of English were necessary to access the survey, which was advertised using a public Facebook event, and an e-mail ‘snowballing’ method (whereby people who have already participated can send an automatically-generated message to their friends, inviting them to participate). Each advertisement invited people to participate in an anonymous online survey ‘on health-related attitudes being conducted by Deakin University’, which would take approximately 15 minutes. The advertisement provided a web link to a plain language statement, below which was a checkbox to indicate informed consent. Participants could only proceed to the survey after checking the box. No rewards or incentives were offered for participation. The number of responses collected was 402.

2.2.2 Materials

Each section of the survey was linked to the following one by a ‘Next’ button. Responses were submitted by pressing ‘Submit’ on the last page.

2.2.2.1 Vignette. The survey first required each participant to read a vignette about a hypothetical target woman named 'Jenny', who was described as real but de-identified. Only female targets were presented, as including male targets would require an excessive number of conditions, and women have been found to experience more weight discrimination than men (see Section 1.14.5).
Participants were randomly allocated to read one of four possible vignettes. In a $2 \times 2$ between-subjects design, the target varied in weight (obese or normal-weight), and claimed weight-control effort (claiming either to work hard to control her weight or to make no effort). The vignettes varied in length from 157 to 162 words. All weight and height measurements for the vignette and the survey were given and requested in each participant’s preferred unit of measurement: kilos and centimetres or pounds and inches. Weights were chosen to accord with respective BMI guidelines for healthy weight and obesity for an average-height Australian woman (Adamson et al., 2007).

Each vignette began with the same introduction to Jenny.

*Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house. Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.*

The next paragraph described her as either obese:

*Jenny is not at a healthy weight. She currently weighs 85 kilos (187 lb), and her doctor told her that this means she is very overweight – in fact, she is obese.*

Or healthy-weight:

*Jenny is at a healthy weight. She currently weighs 65 kilos (143 lb), and her doctor told her that this means she is in the normal, healthy weight range.*

Next, her claimed weight-control effort was described as either low:

*Jenny told her doctor that she makes no effort to try to control her weight – that she frequently enjoys ‘fattening’ foods, and always finishes what’s on her plate, even if this means overeating when she is served a large portion at a restaurant. She added that she never says no to chocolate or lollies, which happen to be her favourite foods. She said that she does not attempt to burn off excess calories by visiting the gym or playing sport.*
Or high:

Jenny told her doctor that she works hard to control her weight – that she carefully avoids fattening foods, and limits the size of her meals, even if this means wasting food when she is served a large portion at a restaurant. She added that she always says no to chocolate and lollies, even though they are her favourite foods. She said that she feels compelled to burn off excess calories by visiting the gym or playing sport.

Below is an example of one of the four possible vignette configurations, in this case, the obese, high-effort target. For the others, see Appendix A.

Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house. Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.

Jenny is not at a healthy weight. She currently weighs 85 kilos, and her doctor told her that this means she is very overweight – in fact, she is obese.

Jenny told her doctor that she works hard to control her weight – that she carefully avoids fattening foods, and limits the size of her meals, even if this means wasting food when she is served a large portion at a restaurant. She added that she always says no to chocolate and lollies, even though they are her favourite foods. She said that she feels compelled to burn off excess calories by visiting the gym or playing sport.

2.2.2.2 Stereotyping. Participants reported their perceptions of Jenny by indicating the extent to which they agreed with each of 12 statements such as, 'Jenny is intelligent' and 'Jenny is lazy' (see Table 2.1 for a list) on 11-point Likert scales anchored by 0: ‘Disagree completely’, and 10: ‘Agree completely’.

2.2.2.3 Participant characteristics. The final part of the survey concerned participant attitudes and characteristics. Belief in a Just World was measured using Dalbert’s (1999) General and Personal Belief in a Just World Scale, whereby participants indicate their agreement with each of 13 statements on a Likert scale from 1: 'Strongly agree', to 6: 'Strongly disagree'. The first six questions concern perceptions of fairness in the world generally (for example, 'I think basically the world is not a just place') and the last seven questions concern
perceptions of fairness in one's own life (for example, 'I believe that, by and large, I deserve what happens to me'). Mean scores were calculated for each subscale, with higher scores indicating greater BJW. The structure of the scale has been supported by factor analysis (Dalbert, 1999), and the separate dimensions have been found to correlate with relevant variables across languages and cultures. Personal BJW is related to coping, mood, life satisfaction, and self-esteem (Correia, Kamble, & Dalbert, 2009; Dalbert, 1999; Dalbert, 2002; Otto, Boos, Dalbert, Schöps, & Hoyer, 2006), while General BJW predicts perceived fairness of others' outcomes, helping behaviours, and emotional responses to victims (Murphy-Berman & Berman, 1990; Schmitt, 1991; Schmitt et al., 1991). In the present study, internal consistency was good for the Personal subscale (7 items; $\alpha = .84$), but lower for the General subscale (6 items; $\alpha = .66$). These reliability coefficients are similar to those observed by Dalbert (1999, 2002) when using the original German scale ($\alpha = .60$ to .78 for General BJW and $\alpha = .79$ to .87 for Personal BJW), and by Oppenheimer (2006) using the English translation ($\alpha = .60$ to .75 for General BJW and $\alpha = .80$ to .85 for Personal BJW).

Self-esteem was measured using Rosenberg's (1965) Self-Esteem Scale, whereby participants indicate their agreement with each of ten statements about self-worth (for example, 'I certainly feel useless at times') on a Likert scale from 4: 'Strongly agree', to 1: 'Strongly disagree'. After reverse-scoring of negatively worded items, the ten item scores were summed to give a total score out of 40, with higher scores indicating higher self-esteem. The Rosenberg Self-Esteem Scale is one of the most widely-used measures of self-esteem; it has been translated into many languages and found to be reliable and valid across different cultures and age groups, and to correlate with relevant personality variables.
(Martín-Albo, Núñez, Navarro, & Grijalvo, 2007; Schmitt & Allik, 2005). In the present study, internal consistency was excellent ($\alpha = .90$), similar to the reliability coefficient obtained among Australian respondents in Schmitt and Allik’s study ($\alpha = .89$).

The next page asked about basic characteristics: country of residence, gender, age, weight, and height. Dieting status was assessed with the yes/no question, 'Are you currently on a diet to lose weight?' (Lowe, Whitlow, & Bellwoar, 1991).

Attitudes to fat people in general were measured using Crandall's (1994) Anti-Fat Attitudes (AFA) scale, which asks participants to indicate their agreement with each of 13 statements, on a Likert scale from 0: 'Does not describe me at all', to 10: 'Describes me perfectly'. The three subscales of the AFA address different components of attitudes to fat: dislike for fat people (seven items; for example, 'I really don't like fat people much'), belief that weight is due to willpower (three items; for example, 'Some people are fat because they have no willpower'), and fear of becoming fat oneself (three items; for example, 'I feel disgusted with myself when I gain weight'). Mean scores were calculated for each subscale, giving a score from 0-10, with higher scores indicating respectively, stronger dislike for fat people, fear of becoming fat, and belief that weight is due to willpower. The AFA has been found to be reliable across cultures and languages (Crandall & Martinez, 1996; Pepper & Ruiz, 2007), and to correlate with other popular measures of obesity stigma, both explicit (Swami, Pietschnig, Stieger, Tovee, & Voracek, 2010) and implicit (O’Brien, Hunter, & Banks, 2007), with subscale $\alpha$ between .66 and .84 (Crandall). Internal consistency was good for
all subscales in the present study: Dislike (seven items; $\alpha = .87$), Fear of Fat (three items; $\alpha = .87$), and Willpower (three items; $\alpha = .81$).

Eating restraint was measured using Herman and Polivy’s (1980) Revised Restraint Scale (RRS), a 10-item questionnaire that uses a combination of multiple-choice and open-ended questions concerning participants’ weight fluctuation (four items; for example, 'What is your maximum weight gain within a week?') and concern with dieting (six items; for example, 'How conscious are you of what you're eating?'). Scores were assigned to each item according to Herman and Polivy, yielding a range of possible total scores from 0-36, with higher scores representing greater eating restraint. Participants scoring above the median (usually around 16) are classified as ‘restrained eaters’. The RRS has been widely used across different nations and languages (e.g. Scagliusi et al., 2005; van Strien, Breteler, & Ouwens, 2002), and many studies have established its reliability and validity (Gorman & Allison, 1995). It has been found to correlate with other measures of restrained eating (van Strien, Herman, Engels, Larsen, & van Leeuwe, 2007; Williamson et al., 2007), and internal consistency usually exceeds $\alpha = .76$ (Allison, Kalinsky, & Gorman, 1992; Klem, Klesges, Bene, & Mellon, 1990). In the present study, $\alpha = .80$.

Body dissatisfaction was measured using the 13-item combined Weight Concern and Shape Concern subscales of Fairburn and Beglin’s (1994) Eating Disorder Examination Questionnaire (EDE-Q). This is a 38-item measure of attitudes and behaviours related to eating which uses a combination of multiple-choice and open-ended questions, such as, 'Over the past four weeks (28 days)... how dissatisfied have you felt about your weight?' and ‘On how many days out of the past 28 days... have you definitely wanted your stomach to be flat?’. Each of
the items comprising the Weight and Shape Concern subscales was scored 0-6, and body dissatisfaction scores were calculated using the mean of the combined subscales, with higher scores indicating greater body dissatisfaction. The EDE-Q has been found to be reliable, with $\alpha = .89$ and $\alpha = .93$ for the respective Weight Concern and Shape Concern subscales (Luce & Crowther, 1999). There is extensive support for its validity as a screening instrument for eating disorder symptoms, even among nonclinical samples (Anderson & Williamson, 2002; Mond, Hay, Rodgers, Owen, & Beumont, 2004). The combined Weight and Shape Concern subscales have been used as a measure of body dissatisfaction in other studies (e.g. de Souza, Mussap, & Cummins, 2010; Hrabosky et al., 2006), as they tend to be highly correlated, suggesting a single underlying factor (Peterson et al., 2007). This was the case in the present study, $R = .91, p < .001$, and internal consistency for the combined Weight and Shape subscales was excellent ($13$ items; $\alpha = .94$).

2.2.2.4 Responsibility for Jenny’s weight. The questionnaire also included a measure of attribution of responsibility for Jenny’s weight. Participants responded to the question, ‘How do you divide responsibility for Jenny’s current weight?’ using an 11-point Likert scale anchored by 0: ‘Completely due to factors beyond Jenny’s control’, and 10: ‘Completely due to factors within Jenny’s control’.

2.3 Results

2.3.1 Data Cleaning

Data were analysed using IBM SPSS Statistics 19 (2010). After the removal of missing data, there were 372 responses. There was significant skew on
some of the outcome variables, although no skewness ratio exceeded 7.45 \((SE = 0.13)\). To confirm that non-normality was not a problem due to the large sample size, key analyses were repeated with transformed variables. In all cases, transformations did not affect the significance of results. However, all results reported use a conservative significance level of \(p < .01\). The use of scales eliminated the need to remove outliers.

### 2.3.2 Sample Characteristics

The majority of the sample were female (285 female, 83 male, 4 unspecified), with a mean age of 32.74 years \((SD = 13.40\) years) and a mean BMI of 27.05 \((SD = 7.45)\), which means that the average participant was in the 'overweight' category. Most participants were living in Australia \((N = 243)\), with slightly more current non-dieters \((N = 223)\) than dieters \((N = 149)\). Random allocation of vignettes meant approximately equal groups: 93 participants read about obese/high-effort Jenny, 94 participants read about obese/low-effort Jenny, 100 participants read about healthy-weight/high-effort Jenny, and 85 participants read about healthy-weight/low-effort Jenny.

### 2.3.3 Potential Confounds

Chi-square tests were used to test for differences between the four groups in terms of gender or dieting status. A MANOVA was used to check for differences between the four groups’ mean age, BMI, and scores on the relevant scales: AFA Dislike, Willpower and Fear of Fat, General and Personal BJW, Self Esteem, Eating Restraint, and Body Dissatisfaction. The only variable on which the groups differed was their AFA Dislike, \(F(3, 359) = 3.98, p < .01, \eta^2 = .03\). There was a significant difference between the highest- and lowest-scoring groups: participants who read about healthy-weight, high-effort Jenny expressed
more dislike for fat people \((M = 2.88, SD = 2.19)\) than did participants who read about healthy-weight, low-effort Jenny \((M = 1.99, SD = 1.74)\), \(F(1, 183) = 8.38, p < .01, \eta^2 = .04\). The other groups did not differ. Hence, AFA Dislike was tested as a covariate in subsequent analyses and included where significant, including examination of simple effects.

### 2.3.4 Main Effects of Jenny’s Weight on Stereotyping

A 2 × 2 factorial MANCOVA was conducted to assess the effect of Jenny’s weight (obese or healthy-weight) and claimed weight-control effort (high or low) on participants’ endorsement of the 12 descriptive statements. Box’s \(M\) was significant, but Levene’s test was acceptable for all DVs. AFA Dislike was a significant covariate at the multivariate level, \(F(12, 356) = 4.63, p < .001, \eta^2 = .14\).

There were several significant main effects of weight; they are presented here in decreasing order of effect size. Compared to healthy-weight Jenny, obese Jenny was perceived as significantly more likely to develop a serious illness in the future, \(F(1, 367) = 67.06, p < .001, \eta^2 = .15\), less attractive, \(F(1, 367) = 26.92, p < .001, \eta^2 = .07\), less strong-willed, \(F(1, 367) = 24.44, p < .001, \eta^2 = .06\), more lazy, \(F(1, 367) = 24.20, p < .001, \eta^2 = .06\), more emotional, \(F(1, 367) = 11.02, p < .01, \eta^2 = .03\), and more unhappy, \(F(1, 367) = 9.54, p < .01, \eta^2 = .03\). Means and standard deviations are presented in Table 2.1.

### 2.3.5 Main Effects of Jenny’s Effort on Stereotyping

There were also several significant main effects of effort; again, they are presented here in decreasing order of effect size. When Jenny said she made an effort to control her weight, she was rated as more strong-willed, \(F(1, 367) = 103.61, p < .001, \eta^2 = .22\), less lazy, \(F(1, 367) = 63.14, p < .001, \eta^2 = .15\), more
intelligent, $F(1, 367) = 28.50, p < .001, \eta^2 = .07$, more unhappy, $F(1, 367) = 23.57, p < .001, \eta^2 = .06$, less likely to become ill in the near future, $F(1, 367) = 18.18, p < .001, \eta^2 = .05$, and more likely to be successful in her career, $F(1, 367) = 11.88, p < .001, \eta^2 = .03$, than her low-effort counterpart. Means and standard deviations are presented in Table 2.1.
Table 2.1

Study 1: Mean Endorsement of Descriptions by Target’s Weight and Effort

<table>
<thead>
<tr>
<th>Description</th>
<th>Obese target, $N = 187$</th>
<th>Healthy-weight target, $N = 185$</th>
<th>High-effort target, $N = 193$</th>
<th>Low-effort target, $N = 179$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jenny is intelligent</td>
<td>6.50 (1.87)</td>
<td>6.63 (1.94)</td>
<td>7.03 (1.76)**</td>
<td>6.08 (1.92)**</td>
</tr>
<tr>
<td>Jenny is attractive</td>
<td>5.24 (2.07)**</td>
<td>6.21 (1.65)**</td>
<td>5.89 (1.82)</td>
<td>5.54 (2.03)</td>
</tr>
<tr>
<td>Jenny is not a happy person</td>
<td>4.71 (2.46)*</td>
<td>3.99 (2.43)*</td>
<td>4.92 (2.26)**</td>
<td>3.74 (2.52)**</td>
</tr>
<tr>
<td>Jenny is lazy</td>
<td>4.63 (2.63)**</td>
<td>3.40 (2.45)**</td>
<td>3.09 (2.33)**</td>
<td>4.99 (2.57)**</td>
</tr>
<tr>
<td>Jenny is an emotional person</td>
<td>5.65 (1.89)*</td>
<td>5.05 (1.76)*</td>
<td>5.55 (1.81)</td>
<td>5.12 (1.86)</td>
</tr>
<tr>
<td>Jenny will be successful in her career</td>
<td>5.59 (1.80)</td>
<td>5.66 (1.64)</td>
<td>5.90 (1.64)*</td>
<td>5.33 (1.74)*</td>
</tr>
<tr>
<td>Jenny is not a trustworthy person</td>
<td>2.54 (2.13)</td>
<td>2.85 (1.99)</td>
<td>2.73 (2.14)</td>
<td>2.68 (2.03)</td>
</tr>
<tr>
<td>Jenny is a strong-willed person</td>
<td>4.35 (2.41)**</td>
<td>5.56 (2.58)**</td>
<td>6.07 (2.32)**</td>
<td>3.78 (2.28)**</td>
</tr>
<tr>
<td>Jenny is popular</td>
<td>5.49 (1.78)</td>
<td>5.79 (1.61)</td>
<td>5.52 (1.69)</td>
<td>5.78 (1.71)</td>
</tr>
<tr>
<td>Jenny will not find a romantic partner</td>
<td>3.30 (2.31)</td>
<td>2.92 (2.07)</td>
<td>3.01 (2.18)</td>
<td>3.24 (2.22)</td>
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<tr>
<td>Jenny is shy</td>
<td>3.95 (1.96)</td>
<td>3.93 (1.92)</td>
<td>4.15 (1.98)</td>
<td>3.72 (1.88)</td>
</tr>
<tr>
<td>Jenny will develop a serious illness in the near future</td>
<td>5.91 (2.28)**</td>
<td>3.96 (2.33)**</td>
<td>4.42 (2.50)**</td>
<td>5.50 (2.38)**</td>
</tr>
</tbody>
</table>

* Ratings differed significantly at $p < .01$  ** Ratings differed significantly at $p < .001$
2.3.6 Interactions Between Jenny’s Weight and Effort on Stereotyping

There were three significant interactions between Jenny's weight and effort on participants' perceptions of her. The first was on the perception that 'Jenny is a strong-willed person', $F(1, 367) = 21.06, p < .001, \eta^2 = .05$. The relevant means and $SD$s are shown in Figure 2.1. When she claimed to make an effort to control her weight, healthy-weight Jenny was rated as significantly more strong-willed than was obese Jenny, $F(1, 190) = 46.54, p < .001, \eta^2 = .20$. By contrast, when Jenny claimed to make no effort, weight had no effect on perceptions of willpower. Healthy-weight Jenny was rated as significantly more strong-willed when she claimed to make an effort to control her weight than when she claimed to make no effort, $F(1, 182) = 106.89, p < .001, \eta^2 = .37$. Obese Jenny was also rated as significantly more strong-willed when she claimed to make an effort to control her weight than when she claimed to make no effort, $F(1, 184) = 13.25, p < .001, \eta^2 = .07$. 
Figure 2.1. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is a strong-willed person’, by Jenny’s weight and claimed weight-control effort.

Another significant interaction between weight and effort on stereotyping concerned the perception that 'Jenny is intelligent', $F(1, 367) = 12.53, p < .001, \eta^2 = .03$, as shown in Figure 2.2. When she claimed to make an effort to control her weight, healthy-weight Jenny was rated as significantly more intelligent than was obese Jenny, $F(1, 190) = 8.88, p < .01, \eta^2 = .05$. By contrast, when Jenny claimed to make no effort, weight had no effect on perceptions of intelligence. Healthy-weight Jenny was rated as significantly more intelligent when she claimed to make an effort to control her weight than when she claimed to make no effort, $F(1, 182) = 34.44, p < .001, \eta^2 = .16$. By contrast, ratings of obese Jenny’s intelligence did not differ significantly by her claimed weight-control effort.
Figure 2.2. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is intelligent’, by Jenny’s weight and claimed weight-control effort.

The third interaction between weight and effort on stereotyping concerned the perception that 'Jenny will be successful in her career', $F(1, 367) = 12.53, p < .001, \eta^2 = .03$, as shown in Figure 2.3. Ratings of high-effort Jenny’s likelihood of career success did not differ significantly by her weight; the same was true for low-effort Jenny. Healthy-weight Jenny was rated as significantly more likely to be successful in her career when she claimed to make an effort to control her weight than when she claimed to make no effort, $F(1, 182) = 15.50, p < .001, \eta^2 = .08$. By contrast, ratings of obese Jenny’s likelihood of career success did not differ by her claimed weight-control effort.
Figure 2.3. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny will be successful in her career’, by Jenny’s weight and claimed weight-control effort.

2.3.7 Effects of Participant Characteristics

The influence of participant characteristics on stereotyping of Jenny was tested by including each one in a separate 3-way MANOVA, together with Jenny’s weight and claimed weight-control effort, to assess their effects on participants’ endorsement of the 12 descriptive statements. Continuous variables were dichotomised using a median-split, except in the case of age, where the groups created by a tercile split were deemed more interpretable. The Dislike subscale of the AFA was included as a covariate in analyses, including analyses of simple effects, of all other participant characteristics (except, of course, AFA Dislike itself). In all cases, Box’s $M$ was significant, but Levene’s test was acceptable for all DVs. No three-way interactions were found. Correlations
between participant characteristics are shown in Table 2.2, and effects for each variable are described in decreasing order of effect size.
Table 2.2

Study 1: Correlations Between Participant Characteristics

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>8</th>
<th>9</th>
<th>10</th>
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<tbody>
<tr>
<td>1</td>
<td>Age</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Gender (0 = female, 1 = male)</td>
<td>.08</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>BMI</td>
<td>.31**</td>
<td>-.06</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Body dissatisfaction</td>
<td>-.16*</td>
<td>-.35**</td>
<td>.20**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Self-esteem</td>
<td>.20**</td>
<td>.05</td>
<td>.03</td>
<td>-.47**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Dieting (0 = no, 1 = yes)</td>
<td>-.059</td>
<td>-.36**</td>
<td>.17*</td>
<td>.47**</td>
<td>-0.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Eating restraint</td>
<td>-.06</td>
<td>-.41**</td>
<td>.24**</td>
<td>.74**</td>
<td>-.31**</td>
<td>.56**</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8</td>
<td>AFA Dislike</td>
<td>-.05</td>
<td>.16*</td>
<td>-.13</td>
<td>.09</td>
<td>-.15*</td>
<td>.01</td>
<td>.01</td>
<td></td>
<td></td>
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<tr>
<td>9</td>
<td>AFA Fear of Fat</td>
<td>-.10</td>
<td>-.31**</td>
<td>-.01</td>
<td>.70**</td>
<td>-.32**</td>
<td>.40**</td>
<td>.64**</td>
<td>.30**</td>
<td></td>
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<tr>
<td>10</td>
<td>AFA Willpower</td>
<td>-.04</td>
<td>.11</td>
<td>-.17*</td>
<td>.12</td>
<td>-.03</td>
<td>.08</td>
<td>.05</td>
<td>.55**</td>
<td>.33**</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>General BJW</td>
<td>-.02</td>
<td>-.09</td>
<td>.04</td>
<td>-.03</td>
<td>.22**</td>
<td>.05</td>
<td>.02</td>
<td>.08</td>
<td>.06</td>
<td>.12</td>
</tr>
<tr>
<td>12</td>
<td>Personal BJW</td>
<td>-.07</td>
<td>-.01</td>
<td>-.15*</td>
<td>-.12</td>
<td>.33**</td>
<td>.05</td>
<td>-.06</td>
<td>.07</td>
<td>.02</td>
<td>.20**</td>
</tr>
</tbody>
</table>

* p < .01  ** p < .001
2.3.7.1 Age. A tercile split was used to create three age groups: 120 participants aged 18-24, 128 participants aged 25-37, and 124 participants aged 38 and over. Thus, a 2 (Jenny’s weight) × 2 (Jenny’s claimed weight-control effort) × 3 (Age) factorial MANCOVA was conducted to assess the effects on participants’ endorsement of the 12 descriptions of Jenny; AFA Dislike was a significant covariate, $F(12, 348) = 4.70, p < .001, \eta^2 = .14$. There were no main effects of age and no interactions of age with effort, but two interactions of age with weight.

Participants’ age interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is attractive’, $F(2, 359) = 9.16, p < .001, \eta^2 = .05$, as shown in Figure 2.4. The youngest participants rated obese Jenny as significantly less attractive than healthy-weight Jenny, $F(1, 117) = 44.26, p < .001, \eta^2 = .27$. In the other two age groups, ratings of Jenny's attractiveness did not differ significantly by her weight. Ratings of obese Jenny’s attractiveness differed significantly by overall age group, $F(2, 183) = 5.36, p < .01, \eta^2 = .05$, while ratings of healthy-weight Jenny’s attractiveness did not.
Figure 2.4. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is attractive’, by age group and Jenny’s weight.

Participants’ age interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is popular’, $F(2, 359) = 5.38, p < .01, \eta^2 = .03$, as shown in Figure 2.5. The youngest participants rated obese Jenny as significantly less popular than healthy-weight Jenny, $F(1, 117) = 10.29, p < .01, \eta^2 = .08$. In the other two age groups, ratings of Jenny’s popularity did not differ significantly by her weight. Ratings of obese Jenny’s popularity did not differ significantly by overall age group; the same was true for healthy-weight Jenny.
Figure 2.5. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is popular’, by age group and Jenny’s weight.

2.3.7.2 BMI. The cut-off point for overweight, according to the NHMRC (2003) guidelines for BMI, was used to create two groups: 170 non-overweight participants with a BMI of 25 or below, and 194 overweight participants with a BMI above 25. There were eight participants for whom BMI could not be calculated, as they did not report their weight and/or height. A 2 (Jenny’s weight) × 2 (Jenny’s claimed weight-control effort) × 2 (BMI) factorial MANCOVA was conducted to assess the effects on participants’ endorsement of the 12 descriptions of Jenny; AFA Dislike was a significant covariate, $F(12, 344) = 4.43, p < .001, \eta^2 = .13$. There were no main effects of BMI, no interactions of BMI with effort, but one interaction of BMI with weight.

Participants’ BMI interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is attractive’, $F(1, 355) = 21.00, p < .001, \eta^2 = .06$, as
shown in Figure 2.6. Non-overweight participants rated obese Jenny as significantly less attractive than healthy-weight Jenny, $F(1, 167) = 44.79, p < .001, \eta^2 = .21$. Among overweight participants, Jenny’s perceived attractiveness did not differ by her weight. Obese Jenny was rated as significantly more attractive by overweight participants than by non-overweight participants, $F(1, 179) = 12.59, p < .001, \eta^2 = .07$, while ratings of healthy-weight Jenny’s attractiveness did not differ by participants’ BMI.

Figure 2.6. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is attractive’, by BMI classification and Jenny’s weight.

2.3.7.3 Body dissatisfaction. A median split was used to create two groups based on the combined Weight Concern and Shape Concern subscales of the EDEQ: 189 participants who scored below 2.54, and 182 participants who scored above 2.54. There was one participant for whom an overall body
dissatisfaction score could not be calculated, as they did not answer the relevant scale items. A 2 (Jenny’s weight) × 2 (Jenny’s claimed weight-control effort) × 2 (body dissatisfaction) factorial MANCOVA was conducted to assess the effects on participants’ endorsement of the 12 descriptions of Jenny; AFA Dislike was a significant covariate, $F(12, 351) = 5.00, p < .001, \eta^2 = .15$. There were no interactions of body dissatisfaction with weight or effort, but one main effect of body dissatisfaction.

Participants with lower body dissatisfaction rated Jenny (overall) as more likely to end up without a romantic partner ($M = 3.34, SD = 2.07$) than did participants with higher body dissatisfaction ($M = 2.87, SD = 2.31$), $F(1, 362) = 8.28, p < .01, \eta^2 = .02$.

2.3.7.4 Dislike for fat people. A median split was used to create two groups based on the Dislike subscale of the AFA: 191 participants who scored below 2, and 181 who scored above 2. A 2 (Jenny’s weight) × 2 (Jenny’s claimed weight-control effort) × 2 (Dislike) factorial MANOVA was conducted to assess the effects on participants’ endorsement of the 12 descriptions of Jenny. There were three main effects of Dislike, five interactions of Dislike with weight, and no interactions of Dislike with effort.

The main effects of Dislike were as follows: participants with higher Dislike scores rated Jenny (overall) as more likely to end up without a romantic partner ($M = 3.60, SD = 2.16$) than did those with lower Dislike scores ($M = 2.66, SD = 2.14$), $F(1, 364) = 17.90, p < .001, \eta^2 = .05$. They also rated Jenny (overall) as more lazy ($M = 4.33, SD = 2.75$) than did those with lower Dislike scores ($M = 3.70, SD = 2.47$), $F(1, 364) = 8.85, p < .01, \eta^2 = .02$. Further, they rated Jenny
(overall) as less intelligent ($M = 6.35, SD = 1.92$) than did those with lower Dislike scores ($M = 6.77, SD = 1.86$), $F(1, 364) = 7.21, p < .01, \eta^2 = .02$.

Participants’ dislike for fat people interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is attractive’, $F(1, 364) = 26.23, p < .001, \eta^2 = .07$, as shown in Figure 2.7. Among participants with higher Dislike scores, obese Jenny was rated as significantly less attractive than was healthy-weight Jenny, $F(1, 179) = 52.79, p < .001, \eta^2 = .23$. Among participants with lower Dislike scores, ratings of Jenny’s attractiveness did not differ significantly by her weight. Obese Jenny was rated as significantly less attractive by participants with higher Dislike scores than by participants with lower Dislike scores, $F(1, 185) = 19.95, p < .001, \eta^2 = .10$, and healthy-weight Jenny was rated as significantly more attractive by participants with higher Dislike scores than by participants with lower Dislike scores, $F(1, 183) = 8.58, p < .01, \eta^2 = .05$. 
Figure 2.7. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is attractive’, by dislike for fat people and Jenny’s weight.

Participants’ dislike for fat people interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny will not find a romantic partner’, $F(1, 364) = 22.45, p < .001, \eta^2 = .06$, as shown in Figure 2.8. Among participants with higher Dislike scores, obese Jenny was rated as significantly more likely to end up without a romantic partner than was healthy-weight Jenny, $F(1, 179) = 24.26, p < .001, \eta^2 = .12$. Among participants with lower Dislike scores, ratings of Jenny’s romantic prospects did not differ significantly by her weight. Obese Jenny was rated as significantly more likely to end up without a romantic partner by participants with higher Dislike scores than by participants with lower Dislike scores, $F(1, 185) = 41.13, p < .001, \eta^2 = .18$, while ratings of healthy-weight Jenny’s romantic prospects did not differ significantly by participants’ Dislike scores.
Figure 2.8. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny will not find a romantic partner’, by dislike for fat people and Jenny’s weight.

Participants’ dislike for fat people interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is not a happy person’, $F(1, 364) = 9.31, p < .01, \eta^2 = .03$, as shown in Figure 2.9. Among participants with higher Dislike scores, obese Jenny was rated as significantly more unhappy than was healthy-weight Jenny, $F(1, 179) = 14.70, p < .001, \eta^2 = .08$. Among participants with lower Dislike scores, ratings of Jenny’s unhappiness did not differ significantly by her weight. Ratings of obese Jenny’s unhappiness did not differ significantly by participants’ Dislike scores; the same was true for healthy-weight Jenny.
Figure 2.9. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is not a happy person’, by dislike for fat people and Jenny’s weight.

Participants’ dislike for fat people interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny will develop a serious illness in the near future’, $F(1, 364) = 8.98, p < .01, \eta^2 = .02$, as shown in Figure 2.10. Among participants with higher Dislike scores, obese Jenny was rated as significantly more likely to become ill than was healthy-weight Jenny, $F(1, 179) = 63.21, p < .001, \eta^2 = .26$. This was also found among participants with lower Dislike scores; obese Jenny was rated as significantly more likely to become ill than was healthy-weight Jenny, $F(1, 189) = 14.11, p < .001, \eta^2 = .07$. Ratings of obese Jenny’s likelihood of illness did not differ significantly by participants’ Dislike scores; the same was true for healthy-weight Jenny.
Figure 2.10. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny will develop a serious illness in the near future’, by dislike for fat people and Jenny’s weight.

Participants’ dislike for fat people interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is popular’, $F(1, 364) = 7.75, p < .01$, $\eta^2 = .02$, as shown in Figure 2.11. Among participants with higher Dislike scores, obese Jenny was rated as significantly less popular than was healthy-weight Jenny, $F(1, 179) = 9.93, p < .01, \eta^2 = .05$. Among participants with lower Dislike scores, ratings of Jenny’s popularity did not differ significantly by her weight. Obese Jenny was rated as significantly less popular by participants with higher Dislike scores than by participants with lower Dislike scores, $F(1, 185) = 9.69, p < .01, \eta^2 = .05$, while ratings of healthy-weight Jenny’s popularity did not differ significantly by participants’ Dislike scores.
Figure 2.11. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is popular’, by dislike for fat people and Jenny’s weight.

2.3.7.5 Belief that weight is due to willpower. A median split was used to create two groups based on the Willpower subscale of the AFA: 187 participants who scored below 4.67, and 185 who scored above 4.67. A 2 (Jenny’s weight) × 2 (Jenny’s claimed weight-control effort) × 2 (Willpower) factorial MANCOVA was conducted to assess the effects on participants’ endorsement of the 12 descriptions of Jenny; AFA Dislike was a significant covariate, $F(12, 352) = 3.69, p < .001, \eta^2 = .11$. There was one main effect of Willpower, four interactions of Willpower with weight, and two interactions of Willpower with effort.

Participants with higher Willpower scores rated Jenny (overall) as lazier ($M = 4.75, SD = 2.77$) than did those with lower Willpower scores ($M = 3.27, SD = 2.25$), $F(1, 363) = 17.90, p < .001, \eta^2 = .05$. 
Participants’ belief that weight is due to willpower interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is lazy’, $F(1, 363) = 14.83, p < .001, \eta^2 = .04$, as shown in Figure 2.12. Among participants with higher Willpower scores, obese Jenny was rated as significantly lazier than was healthy-weight Jenny, $F(1, 183) = 34.01, p < .001, \eta^2 = .16$. Among participants with lower Willpower scores, ratings of Jenny’s laziness did not differ significantly by her weight. Obese Jenny was rated as significantly lazier by participants with higher Willpower scores than by participants with lower Willpower scores, $F(1, 185) = 48.38, p < .001, \eta^2 = .21$, while ratings of healthy-weight Jenny’s laziness did not differ significantly by participants’ Willpower scores.

*Figure 2.12*. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is lazy’, by belief that weight is due to willpower and Jenny’s weight.
Participants’ belief that weight is due to willpower interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is not a happy person’, $F(1, 363) = 12.70, p < .001, \eta^2 = .03$, as shown in Figure 2.13. Among participants with higher Willpower scores, obese Jenny was rated as significantly more unhappy than was healthy-weight Jenny, $F(1, 183) = 18.69, p < .001, \eta^2 = .09$. Among participants with lower Willpower scores, ratings of Jenny’s unhappiness did not differ significantly by her weight. Healthy-weight Jenny was rated as significantly more unhappy by participants with lower Willpower scores than by participants with higher Willpower scores, $F(1, 183) = 8.62, p < .01, \eta^2 = .05$, while ratings of obese Jenny’s unhappiness did not differ significantly by participants’ Willpower scores.

![Figure 2.13](image)

*Figure 2.13.* Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is not a happy person’, by belief that weight is due to willpower and Jenny’s weight.
Participants’ belief that weight is due to willpower interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny will develop a serious illness in the near future’, $F(1, 363) = 11.61, p < .01, \eta^2 = .03$, as shown in Figure 2.14. Among participants with higher Willpower scores, obese Jenny was rated as significantly more likely to become ill than was healthy-weight Jenny, $F(1, 183) = 63.28, p < .001, \eta^2 = .26$. This was also found among participants with lower Willpower scores; obese Jenny was rated as significantly more likely to become ill than was healthy-weight Jenny, $F(1, 185) = 13.84, p < .001, \eta^2 = .07$. Obese Jenny was rated as significantly more likely to become ill by participants with higher Willpower scores than by participants with lower Willpower scores, $F(1, 185) = 11.71, p < .01, \eta^2 = .06$, while ratings of healthy-weight Jenny’s likelihood of illness did not differ significantly by participants’ Willpower scores.
Figure 2.14. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny will develop a serious illness in the near future’, by belief that weight is due to willpower and Jenny’s weight.

Participants’ belief that weight is due to willpower interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is attractive’, $F(1, 363) = 10.30, p < .01, \eta^2 = .03$, as shown in Figure 2.15. Among participants with higher Willpower scores, obese Jenny was rated as significantly less attractive than was healthy-weight Jenny, $F(1, 183) = 34.89, p < .001, \eta^2 = .16$. Among participants with lower Willpower scores, ratings of Jenny’s attractiveness did not differ significantly by her weight. Obese Jenny was rated as significantly less attractive by participants with higher Willpower scores than by participants with lower Willpower scores, $F(1, 185) = 11.97, p < .01, \eta^2 = .06$, while ratings of healthy-weight Jenny’s attractiveness did not differ significantly by participants’ Willpower scores.
Figure 2.15. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is attractive’, by belief that weight is due to willpower and Jenny’s weight.

Participants’ belief that weight is due to willpower interacted significantly with Jenny’s claimed weight-control effort to influence perceptions that ‘Jenny will not find a romantic partner’, $F(1, 363) = 7.46, p < .01, \eta^2 = .02$, as shown in Figure 2.16. Among participants with higher Willpower scores, low-effort Jenny was rated as significantly more likely to end up without a romantic partner than was high-effort Jenny, $F(1, 182) = 10.30, p < .01, \eta^2 = .05$. Among participants with lower Willpower scores, ratings of Jenny’s romantic prospects did not differ significantly by her effort. Ratings of high-effort Jenny’s romantic prospects did not differ significantly by participants’ Willpower scores; the same was true for low-effort Jenny.
Figure 2.16. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny will not find a romantic partner’, by belief that weight is due to willpower and Jenny’s claimed weight-control effort.

Participants’ belief that weight is due to willpower interacted significantly with Jenny’s claimed weight-control effort to influence perceptions that ‘Jenny is attractive’, $F(1, 363) = 7.08, p < .01, \eta^2 = .02$, as shown in Figure 2.17. Among participants with higher Willpower scores, high-effort Jenny was rated as significantly more attractive than was low-effort Jenny, $F(1, 182) = 9.56, p < .01, \eta^2 = .05$. Among participants with lower Willpower scores, ratings of Jenny’s attractiveness did not differ significantly by her effort. Ratings of high-effort Jenny’s attractiveness did not differ significantly by participants’ Willpower scores; the same was true for low-effort Jenny.
Figure 2.17. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is attractive’, by belief that weight is due to willpower and Jenny’s claimed weight-control effort.

2.3.7.6 Fear of becoming fat. A median split was used to create two groups based on the Fear of Fat subscale of the AFA: 187 participants who scored below 6, and 185 who scored above 6. A 2 (Jenny’s weight) × 2 (Jenny’s claimed weight-control effort) × 2 (Fear of Fat) factorial MANCOVA was conducted to assess the effects on participants’ endorsement of the 12 descriptions of Jenny; AFA Dislike was a significant covariate, $F(12, 352) = 5.35, p < .001, \eta^2 = .15$. There was one main effect of Fear of Fat, one interaction of Fear of Fat with weight, and no interactions of Fear of Fat with effort.

Participants with lower Fear of Fat scores rated Jenny (overall) as more likely to end up without a romantic partner ($M = 3.24, SD = 2.10$) than did those
with higher Fear of Fat scores ($M = 2.99, SD = 2.30$), $F(1, 363) = 6.89$, $p < .01$, $\eta^2 = .02$.

Participants’ fear of becoming fat interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is not a trustworthy person’, $F(1, 363) = 8.94$, $p < .01$, $\eta^2 = .02$, as shown in Figure 2.18. Among participants with lower Fear of Fat scores, healthy-weight Jenny was rated as significantly more untrustworthy than was obese Jenny, $F(1, 184) = 9.30$, $p < .01$, $\eta^2 = .05$. Among participants with higher Fear of Fat scores, ratings of Jenny’s untrustworthiness did not differ significantly by her weight. Healthy-weight Jenny was rated as significantly more untrustworthy by participants with lower Fear of Fat scores than by participants with higher Fear of Fat scores, $F(1, 182) = 7.13$, $p < .01$, $\eta^2 = .04$, while ratings of obese Jenny’s untrustworthiness did not differ significantly by participants’ Fear of Fat scores.
Figure 2.18. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is not a trustworthy person’, by fear of becoming fat and Jenny’s weight.

2.3.7.7 General belief in a just world. A median split was used to create two groups based on the General subscale of the BJW: 178 participants who scored below 3.33, and 194 who scored above 3.33. A 2 (Jenny’s weight) × 2 (Jenny’s claimed weight-control effort) × 2 (General BJW) factorial MANCOVA was conducted to assess the effects on participants’ endorsement of the 12 descriptions of Jenny; AFA Dislike was a significant covariate, $F(12, 352) = 4.31$, $p < .001$, $\eta^2 = .13$. There was one main effect of General BJW, two interactions of General BJW with weight, and no interactions of General BJW with effort.

Participants with higher General BJW scores rated Jenny (overall) as more lazy ($M = 4.32, SD = 2.69$) than did those with lower General BJW scores ($M = 3.66, SD = 2.51$), $F(1, 363) = 7.59$, $p < .01$, $\eta^2 = .02$. 
Participants’ General BJW interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny is popular’, $F(1, 363) = 9.66$, $p < .01$, $\eta^2 = .03$, as shown in Figure 2.19. Among participants with higher General BJW scores, obese Jenny was rated as significantly less popular than was healthy-weight Jenny, $F(1, 191) = 15.20$, $p < .001$, $\eta^2 = .07$. Among participants with lower General BJW scores, ratings of Jenny’s popularity did not differ significantly by her weight. Ratings of obese Jenny’s popularity did not differ significantly by participants’ General BJW scores; the same was true for healthy-weight Jenny.

![Figure 2.19](image_url)

*Figure 2.19. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is popular’, by general belief in a just world and Jenny’s weight.*

Participants’ General BJW interacted significantly with Jenny’s weight to influence perceptions that ‘Jenny will develop a serious illness in the near future’, $F(1, 363) = 9.66$, $p < .01$, $\eta^2 = .03$, as shown in Figure 2.20. Among participants
with higher General BJW scores, obese Jenny was rated as significantly more likely to become ill than was healthy-weight Jenny, $F(1, 191) = 64.71, p < .001, \eta^2 = .25$. This was also found among participants with lower General BJW scores; obese Jenny was rated as significantly more likely to become ill than was healthy-weight Jenny, $F(1, 175) = 13.48, p < .001, \eta^2 = .07$. Ratings of obese Jenny’s likelihood of illness did not differ significantly by participants’ General BJW scores; the same was true for healthy-weight Jenny.

![Picture of Figure 2.20](image)

*Figure 2.20.* Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny will develop a serious illness in the near future’, by general belief in a just world and Jenny’s weight.

**2.3.7.8 No effects.** Gender, self-esteem, current dieting status, eating restraint and personal BJW had no main effects, nor did they interact with weight or effort to influence perceptions about Jenny.
2.3.8 Responsibility for Jenny’s Weight

Thus far, the analysis has focused on how perceptions of a target individual are directly influenced by her weight and claimed weight-control effort. While Study 1 also sought to investigate how attribution of responsibility for weight mediates stereotyping, the complexity of this process and its centrality to the attributional model of stigma merit a separate chapter. The influence of responsibility and relevant analyses will be reported and discussed in detail in Chapter 3.

2.4 Discussion

2.4.1 Aim and Hypotheses

It was the aim of this study to investigate how an individual's weight and claimed weight-control effort affect whether they are negatively stereotyped. Also of interest was the influence of the perceiver's characteristics on this process of obesity stereotyping. Participants made ratings of a fictional woman ('Jenny') described in a vignette as either obese or healthy-weight, who claimed to make either considerable effort to control her weight, or no effort at all. They then answered questions about their own characteristics and attitudes. It was hypothesised that obesity would incur stereotyping, but that such negative perceptions would be mitigated by a target's claimed weight-control effort. However, it was also predicted that people who expressed more general dislike for obese people, believed weight to be due to willpower, or exhibited strong BJW would be more negative in their evaluation of an obese target, and would stereotype her despite claims that she works hard to control her weight.
2.4.2 Obesity Stereotyping

As predicted, the results demonstrated obesity stereotyping. When Jenny was described as obese, she was perceived as significantly more likely to develop a serious illness in the near future, less attractive, less strong-willed, lazier, more emotional, and more unhappy than she was when described as healthy-weight.

Interpretation of these effects must be tempered by their effect size. At the most, obesity stereotyping accounted for 15% of the variance in Jenny’s perceived likelihood of illness, and less than 10% of the variance in participants’ other respective perceptions about Jenny. Ratings were made on an 11-point scale, and the mean significant difference between obese and healthy-weight Jenny was 1.11 points. Even with the influence of obesity stereotyping, mean ratings of both obese and healthy-weight Jenny fell on the positive side of the scale mid-point on all but three of the dimensions measured. On average, targets of both weights were perceived as intelligent, attractive, not unhappy, and not lazy. Both obese and healthy-weight Jenny were perceived as emotional, and obesity stereotyping lowered ratings of obese Jenny below the neutral point on her perceived likelihood of illness and strong willpower. However, these small effect sizes do not diminish the importance of understanding and eliminating obesity stereotyping; even subtle biases can have a powerful influence on how individuals interact with each other.

2.4.3 Effort Stereotyping

Participants also inferred certain traits from weight-control effort. When Jenny claimed to make an effort to control her weight, she was rated as more strong-willed, less lazy, more intelligent, more unhappy, less likely to become ill in the near future, and more likely to be successful in her career.
Effort seems especially relevant to perceptions relating to self-control, accounting for 22% and 15% of the variance in ratings of Jenny’s strong willpower and laziness respectively. Effort accounted for less than 10% of the variance in all other perceptions, with ratings of both high-effort and low-effort targets falling on the same side of the scale midpoint on all dimensions except likelihood of illness and strong willpower. Still, as with weight, even the smaller effects provide insight into the characteristics inferred from an individual’s claimed weight-control behaviour.

2.4.4 The Role of Effort in Obesity Stereotyping

Contrary to hypotheses, claims of weight-control effort neither eliminated nor clearly reduced negative judgments of an obese target. Jenny's weight and effort interacted to influence only three of the 12 perceptions about her, and these effects were complex. The trends suggested that obesity stereotyping was offsetting effort-based stereotypes, rather than vice-versa.

Effect sizes were modest once again. While effort’s influence on certain ratings of Jenny was significantly different between obese and healthy-weight targets – discussed below – this difference did not account for more than 5% of the variance in ratings. Despite this apparent subtlety, examination of simple effects revealed more compelling group differences. For example, weight accounted for 20% of the variance in ratings of high-effort Jenny’s strength of willpower, but had no significant influence on willpower ratings of her low-effort counterpart.

The largest interaction effect was on the belief that ‘Jenny is a strong-willed person’, as shown in Figure 2.1. Healthy-weight Jenny was credited with strong willpower for her weight-control effort to a greater extent than was obese
Jenny. These results could be interpreted to suggest that obesity stereotyping partially offset the inference that strong willpower accompanies weight-control effort. Alternatively, participants may have doubted the veracity of obese Jenny’s claims to diet and exercise. Such suspicions may have explained the difference in mean ratings, but could not have been unanimous, as obese, high-effort Jenny was still perceived as more strong-willed than either of the low-effort targets. Overall, it appears that for obese individuals, strong willpower is not as readily inferred from alleged weight-control effort as it is for healthy-weight individuals.

A similar interaction between weight and effort influenced perceptions that ‘Jenny is intelligent’, as shown in Figure 2.2. Healthy-weight Jenny was credited with greater intelligence for her weight-control effort, while obese Jenny was not. Again, the interaction suggests that obesity stereotypes negate positive weight-watching stereotypes; anti-fat prejudice may simply be stronger than admiration for intelligent, healthy behaviour. Or perhaps the intelligence inferred from an individual's claim to exercise and eat healthily is not attributed to someone who remains obese despite such efforts. Once again, it is also possible that participants were sceptical of obese Jenny's claims to diet and exercise; this time, effort made no significant difference to ratings of her intelligence.

Participants' belief that ‘Jenny will be successful in her career’ was also influenced by the interaction between her weight and claimed weight-control effort, as shown in Figure 2.3. In this case, there was no direct evidence of obesity stereotyping: Jenny’s perceived likelihood of career success did not differ between obese and healthy-weight targets at either level of effort. The interaction occurred because healthy-weight Jenny was credited with greater career potential for her weight-control effort compared to when she made no effort, while obese
Jenny was not. This could represent blind prejudice; another case of obesity stereotyping negating positive effort-based stereotyping. Participants may not have regarded obesity as a career disadvantage per se, but rather, seen it as incompatible with the stereotype of a motivated career woman. It is also possible that participants inferred different reasons for Jenny’s weight-control effort, according to her weight. If a leaner person diets and exercises, such efforts may be interpreted as evidence of career-related virtues such as being pro-active and self-disciplined, while the same behaviour from an obese person may be seen as a sensible health measure, but otherwise irrelevant to career success. Alternatively, this lack of effect for obese targets could be explained by doubt about the veracity of obese Jenny's claims to diet and exercise.

A recurring theme is evident from the ways in which weight and claimed weight-control effort interactively influenced perceptions. Participants were less inclined to credit obese individuals with the positive qualities otherwise attributed to people who diet and exercise. This represents a subtle form of stigma: a lack of positive recognition which would contribute to the challenges faced by obese people who attempt weight-loss. The pervasiveness of obesity stigma described in the previous chapter supports the possibility of blind prejudice; participants may simply have been hesitant to ascribe any positive characteristics to an obese individual.

Another explanation for the interactions described here concerns the perceived context – and thus, meaning – of Jenny’s weight-control effort. As noted already, this is determined to some extent by her weight. Dieting and exercising in the absence of excess body weight may be regarded as more admirable than doing so in order to reach a healthy weight, as it represents a
precaution rather than a reaction – weight maintenance rather than weight loss. Research has shown that the former is often more difficult (Ikeda, Lyons, Schwartzman, & Mitchell, 2004; NIH, 1998; Wadden & Letizia, 1992; Wadden, Sternberg, Letizia, Stunkard, & Foster, 1989; Wing et al., 1994). Likewise, as the vignettes clearly stated that the purpose of Jenny's exercise and restrained eating was ‘to control her weight’, maintenance of a healthy weight is evidence for success, while obesity represents failure, reinforcing negative stereotypes of obese people as incompetent. Participants may have been especially apt to attribute characteristics like willpower and intelligence to someone who has both set a goal and achieved it. Or, they may have relied on stereotypes of obese people as weak-willed, unintelligent and unmotivated as an explanation for obese Jenny's failure to control her weight despite claiming to try so hard. The use of stereotypes as an explanation for obesity may have been sufficient justification for their expression.

2.4.5 Main Effects of Participant Characteristics

Certain attitudes and characteristics of the evaluator were found to affect perceptions of Jenny overall (averaged across weight and effort), though their effect sizes were small. Two of these main effects were due to significant interactions of participant characteristics with Jenny’s weight. These were the largest of the main effects, each accounting for 5% of the variance in their respective ratings. Specifically: compared to participants who expressed less dislike for fat people, those who expressed more dislike rated Jenny as more likely to end up without a romantic partner. And compared to those with a weaker belief that weight is due to willpower, those who were stronger in such a belief rated Jenny as lazier. As discussed in the following sections, weight interacted
with each of these characteristics, such that high-scorers’ overall ratings on these
dimensions reflected their more negative perceptions of obese Jenny.

As regards main effects that were not accompanied by interactions,
participant characteristics did not account for more than 2% of the variance in
overall ratings of Jenny. Participants who expressed more dislike for fat people
also perceived Jenny as lazier and less intelligent overall, compared to those who
expressed less dislike. This does not demonstrate obesity stigma, but suggests that
both measures tapped a general negativity which pervades judgments of groups
and individuals. Perhaps some participants answered the questionnaire while in a
negative frame of mind, making them more inclined to respond in a negative or
socially undesirable way across various measures. This explanation is supported
by evidence that mood state influences impression formation (Abele & Petzold,
1994; Forgas & Bower, 1987), and individuals differ in their orientation towards
positivity or negativity (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001).

Participants who expressed stronger general BJW perceived Jenny as
lazier than did those who expressed weaker general BJW. This effect could
suggest disdain towards Jenny’s job as a receptionist. People who believe that the
world fairly rewards each person’s efforts may infer that Jenny is lazy for
working in what is presumably an entry-level position.

Participants with higher levels of body dissatisfaction and participants
who expressed more fear of becoming fat (highly correlated characteristics) both
rated Jenny as less likely to end up without a romantic partner than did their
lower-scoring counterparts. This apparent optimism could be a symptom of low
self-esteem or insecurity; participants who are especially self-critical may
perceive Jenny's romantic prospects as relatively good compared to their own. Or,
they may have already found romantic partners despite being less than content with their own appearance, and concluded that Jenny would have similar success, regardless of her weight.

2.4.6 Participant Characteristics and Obesity Stereotyping

Certain traits and attitudes of the evaluator were found to predict endorsement of some obesity stereotypes. The effect sizes of these interactions were small, with group differences in obesity stereotyping accounting for up to 7% of variance in ratings of Jenny. However, examination of simple effects revealed that among participants who expressed higher levels of bias, Jenny’s weight accounted for up to 27% of the variance in certain ratings.

2.4.6.1 Dislike for fat people. As predicted, obese targets were perceived more negatively by people with stronger general dislike for fat people. They rated obese Jenny as less attractive (see Figure 2.7), more likely to end up without a romantic partner (see Figure 2.8), more unhappy (see Figure 2.9), and less popular (see Figure 2.11) than healthy-weight Jenny. By contrast, participants with lower dislike for fat people did not differ in their ratings of obese and healthy-weight Jenny on these dimensions. As was evident from the graphs, some of these differences were due not only to high-scorers’ negative ratings of obese Jenny, but also to their tendency – often nonsignificant – to give more positive ratings of healthy-weight Jenny.

While high-scorers and low-scorers on the Dislike subscale both rated obese Jenny as more likely to become ill than healthy-weight Jenny, this difference was more pronounced among high-scorers (see Figure 2.10). All these results support the use of the Dislike subscale, providing evidence that general anti-fat attitudes are applied when evaluating obese individuals.
2.4.6.2 Belief that weight is due to willpower. As predicted, the belief that weight is due to willpower was also found to predict weight stereotyping. Participants who expressed stronger belief that weight is due to willpower perceived obese Jenny as lazier (see Figure 2.12), more unhappy (see Figure 2.13) and less attractive (see Figure 2.15), than healthy-weight Jenny. By contrast, participants expressing weaker belief that weight is due to willpower did not differ in their ratings of obese and healthy-weight Jenny on these dimensions. As evident from the graphs, some of these differences were not only due to high-scorers' negative ratings of obese Jenny, but also to their (nonsignificant) tendency to make more-positive ratings of healthy-weight Jenny.

As was the case with dislike for fat people, both high-scorers and low-scorers on the Willpower subscale rated obese Jenny as more likely to become ill than healthy-weight Jenny, but this difference was more pronounced among high-scorers (see Figure 2.14).

The finding that endorsement of a ‘laziness’ stereotype was predicted by a belief that weight is due to willpower supports the validity of the subscale, and demonstrates how general attitudes about the controllability of weight influence specific, relevant perceptions about individuals. The finding that controllability beliefs were the only participant characteristic to predict stereotyping of obese Jenny as ‘lazy’ suggests that the laziness stereotype is not blindly applied on the basis of one’s general anti-fat prejudice alone, but may represent an inference grounded in beliefs about the causes of obesity. Alternatively, the association may be the expression of an unconscious schema; Chambliss et al. (2004) observed a similar relationship between controllability beliefs and implicit endorsement of the laziness stereotype. This finding also supports the divergent validity of the
AFA’s Dislike and Willpower subscales and the independence of the concepts they measure, despite their positive correlation (see Table 2.2), and the fact that both predict endorsement of other obesity stereotypes such as unattractiveness and unhappiness.

2.4.6.3 General BJW. As predicted, weight stereotyping was found to be more readily expressed in participants with a strong general belief in a just world. They rated obese Jenny as less popular than healthy-weight Jenny, while participants who expressed a weaker General BJW did not differ in their ratings of obese and healthy-weight Jenny's popularity (see Figure 2.19). As with dislike for fat and belief that weight is due to willpower, both high-scorers and low-scorers on the General BJW scale rated obese Jenny as more likely to become ill than healthy-weight Jenny, but again, this difference was more pronounced among high-scorers (see Figure 2.20). It is interesting to note that the ‘laziness’ stereotype was no more likely to be applied to obese Jenny among those participants who believed that life treats people fairly, despite its potential to be used as a ‘just’ explanation for her obesity. BJW may not have been enough to override Jenny’s claimed weight-control effort when participants were attributing laziness; they may have given obese, high-effort Jenny the benefit of the doubt. However, the effect of BJW on popularity ratings suggests that just-world believers may have assumed that other people would not respond so kindly in their evaluation of obese Jenny, and may stereotype her as undesirable company. The General subscale of the BJW scale concerns beliefs about the world, not one's own sense of fairness. Thus, strong believers in a just world may have seen themselves as more socially welcoming of obese Jenny than other people would be. This similarly explains their higher estimates of obese Jenny's likelihood of
illness. While belief in a just world may not worsen one’s own perceptions of obese individuals, it appears to heighten awareness of obesity’s negative social and health consequences.

2.4.6.4 BMI. The belief that obese individuals are unattractive was found to be more readily endorsed by people who are not overweight themselves. Participants with a BMI below 26 rated obese Jenny as less attractive than healthy-weight Jenny, while overweight participants' ratings of Jenny's attractiveness did not differ by her weight. As Figure 2.6 shows, this was not a case of pro-fat bias among overweight participants, but rather, anti-fat bias among non-overweight participants. The absence of pro-fat bias, and the finding that attractiveness was the only feature influenced by participants' own weight, accords with previous studies which found little or no relationship between BMI and anti-fat prejudice (see Sections 1.9 and 1.14.1). Judgments of Jenny’s attractiveness may have been influenced by the tendency for people to be attracted to similar others (Byrne, 1997) – specifically, to those whose perceived attractiveness matches their own (Berscheld, Dion, Walster, & Walster, 1971; Horton, 2003; Stroebe, Insko, Thompson, & Layton, 1971), and who share physical characteristics (Park & Lennon, 2008). This suggestion must remain speculative, as there is a notable lack of research on the role of body weight in similarity-attraction theory.

2.4.6.5 Age. Weight stereotyping was found to be more readily expressed by younger people. The youngest age group (18-24) rated obese Jenny as less attractive (see Figure 2.4) and less popular (see Figure 2.5) than healthy-weight Jenny, while the older age groups' ratings of Jenny's attractiveness and popularity did not differ by her weight. The effects of age may have been confounded with
the effects of BMI, as these variables were positively correlated (see Table 2.2), reflecting the normal tendency for people to gain weight as they age (ABS, 2009; Lovejoy, 1998). A more likely explanation was offered by Rand and Wright (2001) for their own finding that young adults have a pronounced preference for thinness when evaluating their female peers: during the stage of young adulthood, increased attention to appearance is a response to the social pressures of mate selection and relationship formation. Accordingly, weight makes the greatest difference to attractiveness ratings of young adult targets compared to other age groups (Hebl et al., 2008), and many studies have found body image to become more positive after young adulthood, even as age-related changes make it more difficult to attain a lean, youthful ideal body (Grogan, 2011; Roberts, Cash, Feingold, & Johnson, 2006). More generally, this effect could also be due to the tendency for older people to respond more positively across a diverse range of measures (Carstensen & Mikels, 2005; LeClerc & Kensinger, 2008; Mather & Carstensen, 2005).

2.4.6.6 Fear of becoming fat. An effect suggesting pro-fat bias was observed among participants who expressed a low level of fear of becoming fat. They rated healthy-weight Jenny as more untrustworthy than obese Jenny, while participants who expressed a stronger fear of becoming fat did not differ in their ratings of obese and healthy-weight Jenny's untrustworthiness (see Figure 2.18). It is possible that participants with a lower fear of becoming fat, particularly women, may have rated healthy-weight Jenny as more untrustworthy because they perceived her as sexual competition. Connectedly, these participants may have inferred that healthy-weight Jenny was flirting by discussing weight control in such detail with her doctor. They may have perceived her as boasting, either
about her own successful dietary restraint and exercise, or about her freedom to
do neither without gaining weight. Spontaneous discussion of weight-control with
one’s doctor may be relatively more normal and understandable to people who
have a strong desire not to become fat. (This explanation was supported by post-
hoc analysis: the interaction was present among female participants, but absent
among males.¹ This was to be expected given that there were fewer males in the
sample, but visual inspection of the relevant graphs for each gender revealed that
not even the trend was present among males.) In the absence of further evidence,
this explanation must remain speculative.

2.4.7 Participant Characteristics and Effort Stereotyping

The only participant characteristics which influenced effort-based
stereotyping was the belief that weight is due to willpower. Participants who
expressed stronger belief that weight is due to willpower rated low-effort Jenny as
more likely to end up without a romantic partner (Figure 2.16) and less attractive
(Figure 2.17) than high-effort Jenny. By contrast, those who expressed weaker
belief that weight is due to willpower did not differ in their ratings of high-effort
and low-effort Jenny's romantic prospects and attractiveness. However, the

¹ In a post-hoc analysis, two 2 (Jenny’s weight) × 2 (Fear of Fat) factorial ANCOVAs were
conducted separately for male and female participants, to assess the effects on participants’
endorsement of the statement ‘Jenny is not a trustworthy person’; AFA Dislike was a significant
covariate for females, $F(1, 280) = 7.57, p < .01, \eta^2 = .03$, but not for males. Among female
participants ($N = 285$), fear of becoming fat interacted significantly with Jenny’s weight to
influence perceptions that ‘Jenny is not a trustworthy person’, $F(1, 280) = 12.44, p < .001, \eta^2 =
.04$. Among female participants with lower Fear of Fat scores, healthy-weight Jenny was rated as
significantly more untrustworthy ($M = 3.19, SD = 1.92$) than was obese Jenny ($M = 2.08, SD =
1.85$), $F(1, 120) = 12.06, p < .01, \eta^2 = .09$. Among female participants with higher Fear of Fat
scores, ratings of Jenny’s untrustworthiness did not differ significantly by her weight. Healthy-
weight Jenny was rated as significantly more untrustworthy by female participants with lower
Fear of Fat scores ($M = 3.19, SD = 1.92$) than she was by female participants with higher Fear of
Fat scores ($M = 2.39, SD = 1.94$), $F(1, 136) = 7.47, p < .01, \eta^2 = .05$, while ratings of obese
Jenny’s untrustworthiness did not differ significantly by female participants’ Fear of Fat scores.
Among male participants ($N = 83$), fear of becoming fat and Jenny’s weight did not interactively
influence ratings of Jenny’s untrustworthiness.
influence of willpower beliefs was minor, accounting for 2% of the variance in effort stereotyping on these dimensions.

These two effects may be a consequence of bias; to people who interpret a higher body weight as a sign of weak willpower, those who actively work to control their weight may be seen as projecting a better image. Weight-control effort may be regarded as an attractive and desirable characteristic by such people because they perceive it as effective in preventing or reversing obesity. It is also possible that people who see willpower as important for weight-control also see it as valuable for other appearance-related outcomes. They may have extrapolated from Jenny's claims that she makes no effort to control her weight, inferring that she is not motivated to put work into her appearance, and thus, less likely to look attractive, and more likely to end up without a romantic partner.

2.4.8 No Effects

Several of the participant characteristics measured did not influence stereotyping on the basis of obesity or weight-control effort. With the exception of gender, these were all self-related perceptions and behaviours: body dissatisfaction, self-esteem, current dieting, eating restraint, and belief in a personally just world. The self-referential nature of these characteristics may suggest that judgments about others are made independently of one's own situation, and that participants rated the statements in this study for how well they described Jenny, rather than how Jenny compared to themselves. Gender effects may have been negligible, as in previous research, or may have gone undetected due to the sample composition: less than one-quarter of survey respondents were male.
2.4.9 Conclusions

In conclusion, weight-control effort had little effect on obesity stereotyping, and this generally did not differ by the characteristics and beliefs of the person making the judgment. Obese Jenny was still stereotyped regardless of her claimed weight-control effort, with more negative ratings made by younger participants, and those with a strong general dislike for fat people, a strong belief that weight is due to willpower, a strong belief in a generally just world, and/or a healthy body weight. It would appear that obesity stereotyping of individuals is widespread and unmitigated by claims of effort, albeit worsened by certain attitudes and characteristics. Not only does obesity incur negative stereotyping, but it is a barrier to recognition of individual weight-control effort via positive effort-based stereotyping.

2.4.9.1 Other explanations. Several explanations may be offered for the failure of effort information to reduce obesity stereotyping. First of all, the prediction concerning this effect may have been optimistic, as it was based on the results of King et al.'s (2006) naturalistic shopping-mall study, which compared observers' ratings of interpersonal discrimination such as rudeness, unfriendliness, interaction duration, and lack of eye contact and smiling. In their study, discrimination was only experienced by obese confederate 'customers' who claimed to avoid dieting and exercise; those who claimed to do both experienced less negative non-verbal behaviour than did healthy-weight confederates. In a work situation such as this, there are likely to be rules and norms against the expression of any prejudice. While the difference in settings and measures used limits comparisons between the results of the present study and those of King et
al., it highlights the potential for biased evaluations in the absence of face-to-face, interpersonal discrimination.

A potentially confounding factor was that participants may have been doubtful of Jenny's claimed weight-control effort. In two of the three interactions between her weight and effort on how she was perceived, higher weight-control effort elicited more positive ratings of healthy-weight Jenny, but not obese Jenny. Participants may have suspected that obese Jenny was lying to her doctor when she claimed to diet and exercise, in order to avoid his disapproval. Thus, they may not have inferred intelligence and likely career success from such claims, as they did for her healthy-weight counterpart. As weight is generally perceived to be controllable (see Section 1.11.1), dishonesty may have seemed more plausible than the persistence of obesity despite genuine efforts to lose weight. Indeed, 'dishonest' was a word used by doctors to describe their obese patients in a study by Klein et al. (1982). Although such suspicions were not reflected in ratings of Jenny's untrustworthiness, it would be valuable to replicate the present study with her weight-control effort presented as factual rather than merely claimed. This would rule out the possibility that scepticism offset the (otherwise) stigma-mitigating effects of effort. Chapter 4 reports a study of this type.

2.4.9.2 The attributional model. The results obtained on measures of stereotyping did not support the attributional model's assertion that stigma occurs because obese individuals are held responsible for their weight. Unlike previous studies in which stereotyping of obese targets was reduced when they had medical explanations for their obesity (see Section 1.11.5), information which could have excused Jenny from responsibility for obesity did not reduce negative weight-based stereotyping. This accords with a competing theory of stigma, the
justification-suppression model, which posits that prejudice is based on weight, and attributions of responsibility are merely a means of justifying its expression (see Section 1.12.2). While stereotyping seems largely unmitigated by claimed weight-control effort, it remains unknown whether this is because such claims failed to reduce attributions of responsibility for obesity, or whether attribution of responsibility is not necessary for stereotyping to occur. Conclusions regarding the theories of stigma cannot be drawn until measures of Jenny's perceived responsibility for her weight have been examined in detail. Hence, the next chapter addresses the extent to which such attributions played a role in the stereotyping found here.
Chapter 3

Study 1: The Role of Claimed Weight-Control Effort and Attribution of Responsibility for Weight in Stereotyping of Obese People

3.1 Introduction

Attribution of responsibility for weight has been found to play a key role in prejudice against obese people. General negative attitudes toward overweight or obese people are stronger and more prevalent among people who believe weight to be controllable. Accordingly, self-reported anti-fat prejudice has been experimentally lowered by providing information about the uncontrollable causes of weight. Likewise, obesity stereotyping – the attribution of specific, negative characteristics thought to typify obese individuals – has been reduced by providing medical explanations which excuse such individuals from responsibility for their obesity (see Section 1.11.5).

The attributional model of stigma explains the relationship between controllability beliefs and stigma by framing perceived responsibility as the source of prejudice. When a negative outcome is seen as (wholly or partially) self-inflicted, it is stigmatized. The generality of this explanation is supported by Weiner et al.’s (1988) finding that conditions which are perceived to be controllable or reversible, such as obesity and drug addiction, elicit less sympathy and more anger than those perceived as uncontrollable, such as Alzheimer's disease or blindness. The attributional model also accounts for the less-negative evaluations of individuals who have a medical reason for their obesity; stereotypical traits such as laziness, unhappiness, low intelligence, unattractiveness and social incompetence are reserved for those obese people who
are thought to 'deserve' their excess weight through unhealthy eating and lack of exercise. In the absence of a medical explanation, personal responsibility seems to be assumed.

As described in the preceding chapter, one purpose of Study 1 was to investigate how stereotyping of an obese target individual ('Jenny') was affected by her claims of weight-control effort. This was designed as a different source of evidence from which to infer responsibility for weight, compared to the medical-explanation paradigm. While a medical condition explains obesity without directly contradicting stereotypes of laziness and self-indulgence, an individual’s claim that she exercises and restricts her eating provides evidence that she does not possess such stereotypical traits, without explaining her obesity. The results of the relevant analyses in the previous chapter did not support the attributional model's prediction that obesity stereotyping would be reduced by weight-control effort. Obese Jenny was stereotyped negatively, regardless of whether or not she claimed to diet and exercise. There was also evidence of a more subtle form of anti-fat bias: obese Jenny was not credited with some of the positive characteristics attributed to healthy-weight Jenny for her claims to diet and exercise. These results suggest that negative attitudes toward obese people are not necessarily caused by the belief that they deserve their obesity, as the attributional model posits; in the present study, obese individuals were stereotyped regardless of evidence that they were not responsible for their weight.

Besides challenging the attributional model, this finding of persistent stereotyping was also inconsistent with the results of a similar study by King et al. (2006). While the present research relied on a written description, King et al. measured the effects of claimed weight-control effort on interpersonal obesity
discrimination in a naturalistic shopping mall setting. In their study, shop assistants responded more positively to obese confederates who claimed to diet and exercise than they did to those who claimed to do neither. While the discrepancy in findings may be due to methodological differences, it is worthwhile to examine the role that perceived responsibility played in the present results. Was Jenny's alleged effort ineffective in excusing her from attribution of responsibility for her obesity, and thus, stereotyping? Was she disbelieved? Or does stereotyping occur independently of responsibility? Answers to these questions would inform theory on the origins and processes of obesity stigma.

An alternative perspective from which these findings can be interpreted is Crandall and Eshleman's (2003) Justification-Suppression Model (JSM) of prejudice (see Section 1.12.2). This explanation construes attribution of responsibility as only one of many ways of justifying, to oneself and/or others, the expression or experience of suppressed prejudice toward a stigmatized group. Thus, beliefs about the controllability of weight are not the source of anti-fat prejudice, but may excuse its expression. In this way, the JSM accounts for the relationship between obesity stigma and perceived responsibility for weight, and also suggests other paths to the stigma’s expression. In the absence of alternative justifications, those with a strong, “gut-level” aversion to obese people may sometime be unable to suppress such feelings, especially under conditions of cognitive or emotional stress. According to the JSM, suppression of prejudice requires mental energy, and its expression is a relief – even satisfying. Thus, an anonymous task, insufficient information, or the instruction not to think too deeply about responses may have been enough to elicit the expression of unjustified prejudice from participants in Study 1. (It may be added that, while
Hegarty and Golden (2008) advise caution in applying the JSM to individual-level prejudice, Crandall and Eshleman use numerous such examples in support and elaboration of their theory.)

This chapter presents further analysis relating to Study 1. All the analyses relate to participants' attribution of responsibility for Jenny's weight. The first aim was to measure how attribution of responsibility for Jenny's weight was affected by the interaction between her weight and claimed weight-control effort. The second aim was to investigate the role that perceived responsibility played in obesity stereotyping of Jenny: specifically, whether it mediated the influence of effort on perceptions of Jenny, and whether the relationship varied depending on her weight.

It was predicted that participants would attribute responsibility on the basis of congruence between Jenny's weight-control effort and her weight, according to the principle that weight is controllable and can be lowered by conscious attempts to do so. Thus, greater responsibility for weight would be attributed to obese Jenny when she claimed to do nothing to control her weight, and to healthy-weight Jenny when she claimed to diet and exercise. It was predicted that responsibility ratings would mediate effort's influence on motivation-related perceptions that are relevant to dieting and weight-control, such as strong willpower, laziness, and likelihood of career success.

3.2 Results

3.2.1 Attribution of Responsibility for Jenny’s Weight

Overall, participants tended to allocate responsibility for Jenny's weight slightly in the direction of controllable factors ($M = 6.36, SD = 2.62$). A two-way
ANCOVA was conducted to determine the effect of Jenny's weight (obese or healthy-weight) and weight-control effort (high or low) on the extent to which she was perceived as responsible for her weight. Levene's test was significant, suggesting heterogeneity of variance, but due to the large sample size and absence of outliers, ANCOVA was deemed appropriate with a conservative alpha level of \( p < .01 \), consistent with the results reported in Chapter 2. AFA Dislike was a significant covariate, \( F(1, 367) = 12.85, p < .001, \eta^2 = .03 \), and was included in all analyses of simple effects.

There was a significant main effect of weight. Greater responsibility was attributed to obese Jenny (\( M = 6.72, SD = 2.39 \)) than to healthy-weight Jenny (\( M = 5.99, SD = 2.80 \)), \( F(1, 367) = 12.26, p < .01, \eta^2 = .03 \). There was no main effect of effort; Jenny’s perceived responsibility for her weight did not differ between high-effort and low-effort targets.

There was a significant interaction between Jenny’s weight and effort, \( F(1, 367) = 72.06, p < .001, \eta^2 = .16 \). The relevant means and SDs are shown in Figure 3.1. When she claimed to make an effort to control her weight, healthy-weight Jenny was rated as significantly more responsible for her weight than was obese Jenny, \( F(1, 190) = 15.77, p < .001, \eta^2 = .08 \). When Jenny claimed to make no effort, obese Jenny was rated as significantly more responsible for her weight than was healthy-weight Jenny, \( F(1, 176) = 63.68, p < .001, \eta^2 = .27 \). Healthy-weight Jenny was rated as significantly more responsible for her weight when she claimed to make an effort to control it than when she claimed to make no effort, \( F(1, 182) = 24.19, p < .001, \eta^2 = .12 \). Obese Jenny was rated as significantly more responsible for her weight when she claimed to make no effort to control it than when she claimed to make an effort, \( F(1, 184) = 57.64, p < .001, \eta^2 = .24 \).
four targets, the only responsibility rating that fell below the scale’s neutral point was that of healthy-weight, low-effort Jenny. Despite significant differences between ratings of the other three targets, their weight was each perceived to be determined more by controllable than uncontrollable factors.

Figure 3.1. Mean (SD) ratings of responsibility for Jenny’s weight by her weight and claimed weight-control effort.

3.2.2 Responsibility as a Mediator of Effort’s Effect on Stereotyping

To test whether attributions of responsibility for Jenny’s weight mediated the effect of her claimed weight-control effort, a mediation analysis was conducted on each of the 12 descriptions, with effort (high or low) as the independent variable, and responsibility as the proposed mediator, as shown in
Figure 3.2. As responsibility for obesity carries an entirely different meaning to responsibility for a healthy body weight, this was done separately for participants who read about obese Jenny ($N = 187$) and for those who read about healthy-weight Jenny ($N = 185$), to determine the influence of weight.

![Diagram showing responsibility for weight as a proposed mediator.](image)

Figure 3.2. Model showing responsibility for weight as a proposed mediator.

Path analyses were conducted to test the following predictive paths from the independent variable (IV; Jenny's claimed weight-control effort) to each dependent variable (DV; the statements describing Jenny, for example, 'Jenny is intelligent'): Path $a$ – the path from the IV to the mediator (responsibility for weight); Path $b$ – the paths from the mediator to each DV; Path $c$ – the direct path from the IV to each DV; and Path $ab$ – the indirect paths from the IV to each DV by way of the mediator.

According to Baron and Kenny’s (1986) procedure, a significant mediated effect (Path $ab$) indicates that inclusion of responsibility for weight as a mediator significantly improves prediction of the DV beyond the direct effect of weight-control effort (Path $c$). Provided that effort predicts responsibility in the first place (where Path $a$ is significant), partial mediation is said to have occurred when effort predicts the DV both independently and via responsibility (where Paths $c$
and $ab$ are significant), while full mediation is demonstrated when effort only predicts the DV via responsibility (where Path $ab$ is significant).

Specifically, a bias-corrected bootstrap resampling method (Shrout & Bolger, 2002) was used within AMOS™ (Arbuckle, 2006) to test the significance of indirect paths, with significant relationships denoted by significant beta weights ($\beta$). The variance explained by the mediated model is given by the overall $R^2$ for each DV.

For healthy-weight Jenny, claimed weight control effort positively predicted perceived responsibility (Path $a$), $\beta = .37, p < .001; R^2 = .14, p < .001$. For obese Jenny, this effect was negative, $\beta = -.49, p < .001; R^2 = .24, p < .001$.

Table 3.1 provides the other standardised $\beta$ weights and the overall $R^2$ for each DV, for healthy-weight and obese targets respectively. Mean ratings and standard deviations for each DV for each of the four targets can be found in Table 2.1.
<table>
<thead>
<tr>
<th>DV</th>
<th>Healthy-weight Jenny</th>
<th>Obese Jenny</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Effort $\rightarrow$ DV $\beta$ (Path $c$)</td>
<td>Responsibility $\rightarrow$ DV $\beta$ (Path $b$)</td>
</tr>
<tr>
<td>Jenny is intelligent</td>
<td>.25*</td>
<td>.27*</td>
</tr>
<tr>
<td>Jenny is attractive</td>
<td>.03*</td>
<td>.01</td>
</tr>
<tr>
<td>Jenny is not a happy person</td>
<td>.07*</td>
<td>.26*</td>
</tr>
<tr>
<td>Jenny is lazy</td>
<td>.19*</td>
<td>-.45**</td>
</tr>
<tr>
<td>Jenny is an emotional person</td>
<td>.04*</td>
<td>.21*</td>
</tr>
<tr>
<td>Jenny will be successful in her career</td>
<td>.11*</td>
<td>.25*</td>
</tr>
<tr>
<td>Jenny is not a trustworthy person</td>
<td>.001</td>
<td>.03</td>
</tr>
<tr>
<td>Jenny is a strong-willed person</td>
<td>.41*</td>
<td>.56**</td>
</tr>
<tr>
<td>Jenny is popular</td>
<td>.003</td>
<td>-.03</td>
</tr>
<tr>
<td>Jenny will not find a romantic partner</td>
<td>.01</td>
<td>.10</td>
</tr>
<tr>
<td>Jenny is shy</td>
<td>.04*</td>
<td>.20*</td>
</tr>
<tr>
<td>Jenny will develop a serious illness in the near future</td>
<td>.07*</td>
<td>-.21</td>
</tr>
</tbody>
</table>

*p < .01    ** p < .001
For healthy-weight Jenny, only one indirect effect was significant at the $p < .01$ level. The relationship between her claimed weight-control effort and participants’ agreement with the statement 'Jenny is intelligent' was partially mediated by her perceived responsibility for her healthy weight. As shown in Figure 3.3, effort predicted responsibility for a healthy body weight, and both effort and responsibility predicted attributions of intelligence.

![Figure 3.3](image)

*Figure 3.3. Responsibility for healthy body weight as a mediator of effort’s effect on perceived intelligence, *$p < .01$, **$p < .001$."

For obese Jenny, there were five significant indirect effects, presented in decreasing order of effect size. The relationship between her claimed weight-control effort and participants’ agreement with the statement 'Jenny is a strong-willed person' was wholly mediated by her perceived responsibility for her obesity. As shown in Figure 3.4, effort negatively predicted responsibility for obesity, and responsibility negatively predicted attribution of strong willpower.
The relationship between obese Jenny’s claimed weight-control effort and participants’ agreement with the statement 'Jenny is lazy' was wholly mediated by her perceived responsibility for her obesity. As shown in Figure 3.5, effort negatively predicted responsibility for obesity, and responsibility predicted attribution of laziness.

**Figure 3.5.** Responsibility for obesity as a mediator of effort’s effect on perceived laziness, *$p < .01$, **$p < .001$.**

The relationship between obese Jenny’s claimed weight-control effort and participants’ agreement with the statement 'Jenny will develop a serious illness in the near future' was wholly mediated by her perceived responsibility for her obesity. As shown in Figure 3.5, effort negatively predicted responsibility for obesity, and responsibility predicted attribution of laziness.

**Figure 3.4.** Responsibility for obesity as a mediator of effort’s effect on perceived strength of willpower, *$p < .01$, **$p < .001$.**
obesity. As shown in Figure 3.6, effort negatively predicted responsibility for obesity, and responsibility predicted perceived likelihood of illness.

\[ R^2 = .24^{**} \]

\[ \beta \text{ Effort} \rightarrow \text{Responsibility} \rightarrow \text{Likelihood of future illness} = -.14^{**} \]

**Figure 3.6.** Responsibility for obesity as a mediator of effort’s effect on perceived likelihood of developing a serious illness in the near future, \(*p < .01, **p < .001\).*

The relationship between obese Jenny’s claimed weight-control effort and participants’ agreement with the statement 'Jenny is not a happy person' was partially mediated by her perceived responsibility for her obesity. As shown in Figure 3.7, effort negatively predicted responsibility for obesity, and both effort and responsibility predicted perceived unhappiness.

\[ R^2 = .10^{*} \]

\[ \beta \text{ Effort} \rightarrow \text{Responsibility} \rightarrow \text{Unhappiness} = -.12^{*} \]

**Figure 3.7.** Responsibility for obesity as a mediator of effort’s effect on perceived unhappiness, \(*p < .01, **p < .001\).*
The relationship between obese Jenny’s claimed weight-control effort and participants’ agreement with the statement 'Jenny is an emotional person' was wholly mediated by her perceived responsibility for her obesity. As shown in Figure 3.8, effort negatively predicted responsibility for obesity, and responsibility predicted perceived emotionality.

![Diagram of relationships between effort, responsibility, and emotionality](image)

*Figure 3.8. Responsibility for obesity as a mediator of effort’s effect on perceived emotionality, *p* < .01, **p** < .001.

### 3.3 Discussion

It was the aim of this chapter to investigate the extent to which an individual's weight and claimed weight-control effort interact in relation to attributions of responsibility for their weight, and whether such attributions mediate the relationship between weight-control effort and obesity stereotypes made of the individual. Firstly, it was predicted that greater responsibility for weight would be attributed to targets whose weight accords with their effort to control it; specifically, to obese/low-effort and healthy-weight/high-effort targets. This would reflect the belief that weight is controllable, and that people who work hard to lose weight will be lighter than those who do not. Secondly, it was predicted that Jenny’s perceived responsibility for her weight would mediate the influence of her weight-control effort on how she was perceived, especially
regarding characteristics which relate to the motivation involved in dieting: strong willpower, laziness, and likelihood of career success.

3.3.1 Attribution of Responsibility for Jenny’s Weight

Consistent with previous research (Crawford & Campbell, 1998), participants rated Jenny’s body weight as more controllable than externally-determined overall. Furthermore, obese Jenny was perceived as more responsible for her weight than was healthy-weight Jenny regardless of effort. This was a small main effect, accounting for only 3% of the variance in attributions of responsibility, and it may have been due to doubt about the veracity of her weight-control effort, and/or the belief that obesity is a consequence of behaviour rather than chance, as found in previous studies (see Section 1.11.1). While participants tended to attribute Jenny’s healthy body weight to uncontrollable factors when she did not diet or exercise, responsibility ratings of obese Jenny fell above the neutral point, regardless of her effort. Where weight is perceived as controllable, it follows that more responsibility would be attributed to people whose weight is further from a healthy range.

As predicted, participants attributed responsibility for weight on the basis of congruence between Jenny’s weight and her effort to control it. Obese targets were perceived to be more responsible for their weight when they claimed not to diet or exercise, while healthy-weight targets were perceived as more responsible for their weight when they claimed to diet and exercise (see Figure 3.1). The effect size of this interaction between weight and effort was considerable, accounting for 16% of the variance in responsibility ratings.

While this pattern accords with the belief that obesity is caused by unhealthy eating and lack of exercise, the relatively lower responsibility attributed
to high-effort, obese Jenny indicates participants' acceptance that uncontrollable factors may also play a role. This indirectly contrasts with Puhl et al.'s (2009) finding that dietetics students rated the diets of obese targets as poorer than the identical diets of normal-weight targets. Their study did not include a measure of responsibility for weight, but the discrepant ratings of identical, detailed nutrition profiles suggest that, even without evidence, their participants attributed targets' obesity – at least partially – to unhealthy eating. The present results show a pattern beyond the putative attribution of responsibility to all obese people found using the medical explanation paradigm. While comparisons are limited by the different measures used and information provided across studies, it appears that such attributions are the product of insufficient knowledge about targets’ behaviour – a ‘best guess’ – and that, when given clear information, people readily consider it when attributing responsibility for weight.

While the interaction effect discussed above suggests that judgments of responsibility for weight are made fairly on the basis of available information, the majority of weight stereotyping described in Chapter 2 occurred regardless of Jenny’s claimed effort. Obese Jenny was still stigmatised for her weight, no matter what she did to control it. The following section explores why stereotyping still occurred, by examining the role of responsibility as a mediator of effort’s influence on participants’ perceptions about Jenny.

### 3.3.2 Responsibility as a Mediator of Effort’s Effect on Stereotyping

Attribution of responsibility for weight was found to mediate the relationship between Jenny’s effort and participants’ endorsement of several descriptive statements, discussed in the following subsections. While effort predicted responsibility to a similar extent (albeit opposite direction) for both...
obese and healthy-weight targets, the mediated effects occurred differentially.
Effort directly influenced seven perceptions about healthy-weight Jenny, but only had one direct effect on perceptions about obese Jenny. By contrast, responsibility mediated effort’s influence on five perceptions about obese Jenny and only one perception about healthy-weight Jenny. This suggests that perceived responsibility for weight is seen as more relevant when making judgments about obese individuals than about healthy-weight individuals. The indirect effects were all of medium size, with effort, via responsibility, accounting for 12−17% of variance in perceptions. Specific ratings are discussed in the following sections.

3.3.2.1 Intelligence. Attributions of responsibility for a healthy body weight were found to partially mediate the relationship between claimed weight-control effort and perceptions of intelligence (see Figure 3.3). Healthy-weight Jenny was credited with intelligence when she claimed to diet and exercise, and when she was perceived as responsible for her weight. By contrast, obese Jenny was not perceived as more intelligent when she made the same claims of weight-control effort, nor did her perceived responsibility for obesity influence intelligence ratings.

The mediating effect of responsibility suggests that participants recognised the difficulty of achieving weight-control, and the good sense needed to persist with it while at a healthy weight. Interestingly, there was an absence of direct prejudice; while greater intelligence was inferred from responsibility for a healthy weight, lower intelligence was not inferred from responsibility for obesity. However, the absence of effort’s effect on perceptions of obese Jenny’s intelligence represents a subtle form of obesity stigma: failure to acknowledge the efforts of obese individuals. While dieting and exercise for weight-control is
sensible and recommended for health (WHO, 2004; WHO, 2012), only healthy-weight Jenny was credited with intelligence for such behaviour. This tendency is also reflected in the interaction shown in Figure 2.2 and discussed in Section 2.4.4 in terms of how effort may have different meanings for people of different weights. For example, a healthy-weight dieter may be seen as pro-active about their health, while an obese dieter may be assumed to be following medical advice to lose weight.

3.3.2.2 Strong willpower. Attributions of responsibility for obesity were found to wholly mediate the relationship between claimed weight-control effort and perceptions of strong willpower (see Figure 3.4). Obese Jenny's claimed weight-control effort only influenced ratings of her willpower via attributions of responsibility for her weight. She was rated as less strong-willed when she was perceived as responsible for her obesity. Beyond its influence on responsibility, obese Jenny's effort did not affect perceptions of her willpower. By comparison, strong willpower was attributed to healthy-weight Jenny when she claimed to diet and exercise, regardless of her perceived responsibility for her weight. This asymmetry is also evident in the interaction effect shown in Figure 2.1 (see Section 2.3.6).

In light of the main effect of weight, whereby obese Jenny was perceived as less strong-willed than healthy-weight Jenny overall (see Table 2.1 and Section 2.3.4), the stronger willpower attributed to obese Jenny when she was not perceived as responsible for her weight does not represent credit for effort so much as exemption from a general stereotype of obese people as weak-willed. Likewise, the negative stereotype was intensified when obese Jenny was perceived as responsible for her weight. On the other hand, the stronger willpower
attributed to high-effort, healthy-weight Jenny is in addition to that already assumed to characterise healthy-weight individuals, and may be understood as extra admiration. Whether or not a person earned their healthy body weight through dieting and exercise, or was genetically predisposed to leanness, their weight-control effort is a sign of willpower; it suggests a pro-active approach to health, as discussed in Section 2.4.4.

3.3.2.3 Laziness. Attributions of responsibility for obesity were found to wholly mediate the relationship between claimed weight-control effort and perceptions of laziness (see Figure 3.5). Obese Jenny's claimed weight-control effort only influenced ratings of her laziness via attributions of responsibility for her weight. This mediated relationship is similar to that described in the preceding section, for predicting ‘Jenny is a strong-willed person’, with valences reversed accordingly.

Taking into account that obese Jenny was generally rated as lazier than healthy-weight Jenny (see Table 2.1 and Section 2.3.4), it can be said that her responsibility for obesity incurred further judgments of laziness, while exemption from such responsibility alleviated the lazy stereotype. Her effort, however, did not affect such ratings beyond its influence on responsibility. By contrast, weight-control effort earned healthy-weight Jenny even lower attributions of laziness, regardless of her perceived responsibility for her weight. Once again, weight-control effort was effective in reducing responsibility for obesity and negative stereotyping, but it did not earn obese Jenny the same level of respect credited to healthy-weight Jenny for claiming to diet and exercise.

3.3.2.4 Likelihood of illness. Attributions of responsibility for obesity were found to wholly mediate the relationship between claimed weight-control
effort and perceived likelihood of developing a serious illness in the near future (see Figure 3.6). Obese Jenny's claimed weight-control effort only influenced ratings of her likelihood of illness via attributions of responsibility for her weight. By contrast, claimed weight-control effort had no direct or indirect influence on such ratings for healthy-weight Jenny.

Bearing in mind that obesity itself increased perceived likelihood of illness (see Table 2.1 and Section 2.3.4), greater responsibility for weight worsened predictions about obese Jenny’s future health outcomes, while less responsibility made such predictions less pessimistic. Her claims to diet and exercise did not affect likelihood of illness ratings except by reducing her perceived responsibility for obesity, thus reducing her perceived chances of becoming ill. By contrast, healthy-weight Jenny’s effort and responsibility for her weight did not affect her already-low likelihood of illness ratings. This pattern of results is similar to those discussed in the preceding two sections, albeit without any improvement in perceptions of healthy-weight’s Jenny’s health on the basis of her effort.

The finding that responsibility for obesity mediated effort’s influence on perceptions of Jenny’s future health suggests that such ratings reflected anti-fat attitudes, rather than just awareness of health risks. While obesity itself increases the likelihood of serious illness, and various indices of health can be improved through weight loss (WHO, 1999), responsibility for obesity is conceptually unrelated to such outcomes. Jenny’s efforts to lose weight could theoretically have reduced her chances of illness, as exercise and healthy eating confer health benefits regardless of weight (Bacon & Aphramor, 2011), but obese Jenny’s effort influenced her perceived likelihood of illness only by reducing responsibility
ratings. This suggests that participants were basing their responses on a sense of justice; a belief that obese people who are responsible for their excess weight are somehow more likely to become ill than those who are not. This may reflect people’s tendency to moralize weight-control (see Section 1.13.4; Saguy & Riley, 2005; Vanden Heede et al., 2006), with illness perceived as a ‘punishment’ for obesity. Alternatively, poor health may be part of the stereotype applied more readily to obese people who are deemed responsible for their weight.

3.3.2.5 Unhappiness. Attributions of responsibility for obesity were found to partially mediate the relationship between claimed weight-control effort and perceived unhappiness (see Figure 3.7). Regardless of weight, Jenny was rated as more unhappy when she claimed to diet and exercise – evidence that weight-control effort itself, regardless of its apparent success or failure, is perceived to be motivated by, or inspiring of, unhappiness. Obese Jenny was rated as more unhappy when she was held responsible for her weight, but this effect was not present, or reversed, with regard to healthy-weight Jenny; her responsibility for being at a healthy weight was unrelated to her perceived unhappiness. For obese Jenny, this meant that effort had a contradictory effect: directly increasing unhappiness ratings whilst excusing her from responsibility for obesity, thus decreasing unhappiness ratings.

Interpretation of this interaction becomes more complex when the mean ratings are considered. A significant main effect of weight meant that overall, obese Jenny was perceived as more unhappy than healthy-weight Jenny (see Table 2.1 and Section 2.3.4). Thus, lower responsibility for weight appears to protect obese Jenny from the ‘unhappy’ stereotype – consistent with the mitigating effect of decreased responsibility for obesity discussed in the preceding
sections – but does not diminish the ‘contentedly lean’ image of healthy-weight Jenny. Likewise, greater responsibility for weight intensified the stereotype of obese Jenny as unhappy, but did not evoke an even less unhappy – perhaps self-satisfied – image of healthy-weight Jenny. This asymmetry suggests that a ‘deservingly obese’ person may be expected to feel shame, while in this instance, it is healthy-weight individuals who are not credited with lower unhappiness (i.e. pride) for having earned their healthy weight; it appears closer to a neutral outcome than a positive one.

3.3.2.6 Emotionality. In the case of emotionality, the appropriateness of mediation analysis is questionable due to the absence of a main effect of effort (see Table 2.1). Only a small amount of variance in ratings is explained by the model, so conclusions must remain tentative. However, the role of effort and responsibility in perceptions of emotionality reflect some of the patterns discussed so far.

Attributions of responsibility for obesity were found to wholly mediate the relationship between claimed weight-control effort and perceptions of emotionality (see Figure 3.8). Obese Jenny's claimed weight-control effort only influenced ratings of her emotionality via attributions of responsibility for her weight. Given that obese Jenny was generally rated as more emotional than healthy-weight Jenny (see Table 2.1 and Section 2.3.4), responsibility for her obesity made her seem even more emotional, while her effort did not affect such ratings beyond its influence on responsibility. Thus, where obese Jenny was excused from responsibility for her weight, she was less-readily stereotyped as emotional. By comparison, healthy-weight Jenny was perceived as even less emotional when she claimed not to make any effort to control her weight, and
more emotional when she did, regardless of her perceived responsibility for her weight. As there is less health- or appearance-related pressure for a healthy-weight individual to diet and exercise besides weight maintenance, this effect could be due to participants’ inference that such efforts are inspired by emotional insecurity or ‘fear of fat’. These relationships between weight, effort and responsibility on perceptions of emotionality indicate that besides the stereotype of an obese ‘emotional eater’, participants may also hold a stereotype of a healthy-weight ‘emotional dieter’.

3.3.2.7 Overview of mediated effects. The results of the present study suggest that attributions of responsibility for weight contribute to the obesity stereotyping described in Chapter 2. Obese Jenny’s perceived responsibility for her weight mediated effort’s influence on every judgment for which weight had a main effect, with the exception of attractiveness. Like obesity itself (see Section 2.3.4), responsibility for obesity predicted ratings of likely illness, weak willpower, laziness, emotionality, and unhappiness. While obese Jenny was perceived as less attractive than her healthy-weight counterpart, her perceived responsibility for obesity was unrelated to attractiveness ratings, which appear to be based on weight rather than the extent to which it is seen as deserved. However, contrary to predictions, other perceptions which were thematically unrelated to weight-control practices – unhappiness and emotionality – were also influenced by effort via attributions of responsibility for Jenny’s obesity. Thus, it may be inferred that most negative stereotyping of obese individuals is based on the belief that they deserve their obesity.

Given that perceived responsibility for weight is important – if not necessary – for obesity stereotyping, there are two ways in which such
attributions may have contributed to the more-negative overall ratings of obese Jenny. Firstly, her claims to diet and exercise may not have completely dispelled the automatic attribution of responsibility for her weight and its associated negative characteristics. As discussed in Section 3.3.1, obese Jenny was perceived as more responsible for her weight than was healthy-weight Jenny. This may have been due to participants disbelieving her claims of effort, or persisting in the belief that weight is controllable, or both.

Secondly, obese Jenny may have been rated more negatively than healthy-weight Jenny on some dimensions because her claimed weight-control effort had less direct influence on how she was perceived. Her claims to diet and exercise may have reduced negative stereotyping by excusing her from responsibility for her obesity, but she was not credited with positive effort-related characteristics to the same extent as healthy-weight Jenny. In other words, negative obesity stereotyping offset positive effort stereotyping (see Section 2.4.4). Accordingly, several significant main effects of effort and obesity were directly opposed: laziness, strong willpower and likelihood of illness. Thus, for obese targets, many of the main effects of effort (see Section 2.4.3) occurred only via its mitigating influence on responsibility for obesity – and stereotyping – rather than attribution of any positive characteristics. The interactions between weight and effort (see Section 2.3.6) are examples of perceptions for which the positive direct effect of effort for healthy-weight Jenny was significantly stronger than the mediated effect of effort via responsibility for obesity (if any). For example, more willpower was credited to healthy-weight Jenny for dieting and exercising than was conceded to obese Jenny for not deserving her weight.
While obese Jenny was not credited with many of the positive characteristics inferred directly from effort, one negative effect – increased unhappiness – was reflected in ratings of both obese and healthy-weight targets. However, another negative perception of dieters – emotionality – was only inferred directly from the weight-control effort of healthy-weight Jenny. This suggests that obesity stereotypes are stronger than weight-watching stereotypes, although their constituent perceptions are neither entirely opposed nor mutually exclusive.

3.3.2.8 Relevance to theories of stigma. The results of the mediation analysis were consistent with the principle underpinning both the attributional and justification-suppression models of anti-fat prejudice. Attributions of personal responsibility for weight were found to predict most negative stereotyping of obese individuals. Accordingly, when such attributions were reduced by Jenny’s claim that she works hard to control her weight, she was perceived less negatively. The finding that effort – via responsibility – increased and decreased ratings which were unrelated to the characteristics of a good dieter suggest that obesity stereotypes are not simply attempts to explain excess weight, but rather, a complex negative schema. While it is unclear whether Jenny’s responsibility for her obesity inspired such perceptions or merely justified their expression, considerable inference would have been necessary to base attributions of unhappiness and emotionality on the extent to which she deserved to be obese. This aspect of the results seems slightly more supportive of the JSM.

The attributional model was challenged by the finding that judgments of Jenny’s attractiveness were based on her weight rather than her responsibility for it. Thus, lower attractiveness ratings of obese Jenny represent unfounded
prejudice. Perhaps attractiveness is merely a matter of individual preference, and not part of the stereotype of a deservingly-obese individual. The JSM provides an alternative explanation. Suppression of prejudiced attitudes may be motivated by the presence of an audience or the potential for evaluation (Crandall & Eshleman, 2003), and thus, such attitudes can be disinhibited by anonymous situations. It has long been known that anonymity in survey research reduces socially-desirable responding on personal or emotive topics (Evans & Miller, 1969), and increases the expression of racially-prejudiced sentiment (Crosby, Bromley, & Saxe, 1980). Attractiveness is a highly subjective judgment – a matter of personal taste – and perhaps participants did not feel compelled to justify or censor their attractiveness ratings – however prejudiced they may be – in an anonymous online survey.

The JSM also sheds light on how the methodology of the present study may have encouraged stereotyping. According to Crandall and Eshleman (2003), prejudiced attitudes may become more difficult to suppress under conditions of cognitive stress, such as attentional demands or time pressure. While participants in the present study were free to answer at their leisure, they were encouraged not to think too deeply about their responses, and were not provided with detailed information on which to base their judgments of Jenny. Most of the descriptive statements concerned her character, about which the vignette only revealed a minimal amount, while weight was made salient. Hence, it is possible that suppression was interrupted, or reliance on stereotypes was justified by the need to switch to superficial, heuristic processing. The literature supports this explanation; theories of impression-formation explain stereotyping as a ‘judgmental heuristic’ used to organise and simplify social perception (Bodenhausen, 1990; Bodenhausen & Wyer, 1985; Macrae, Milne, &
Bodenhausen, 1994), and propose that people rely upon such simplified processing in situations where they are unable to think deeply about an individual’s other characteristics (Bodenhausen, Sheppard, & Kramer, 1994). Accordingly, meta-reviews of the literature on gender discrimination in employment have found that in simulated hiring decisions, discrimination is more likely to occur when participants are provided with less information – especially job-relevant information – about applicants (Davison & Burke, 2000; Tosi & Einbender, 1985). Thus, obesity stereotyping may have been magnified, as it offered a means for participants to fulfil perceived expectations by making varied ratings with little or no evidence either way. The area in which perceptions were relatively less biased was that for which the most relevant information was provided: Jenny’s responsibility for her weight. There are several possible processes at work. Suppression may have been weakened by the speedy, superficial processing of limited information in an anonymous, inconsequential task. Or participants may have seized the opportunity to express their prejudice without adequate information to contradict it. Or they may have – consciously or unconsciously – sought further justification for the stereotypical beliefs upon which they based their judgments. By one or more of these means, the nature of the survey could have facilitated reliance on weight stereotypes.

The attributional model and JSM offer different explanations for the finding that obese Jenny was rated as more responsible for her weight than was healthy-weight Jenny, regardless of her effort. According to the JSM, this may have been motivated by the need to justify the expression of prejudice – perhaps because stereotypes provided clues about Jenny’s characteristics not directly addressed in the vignette, as discussed in the preceding paragraph. According to
the attributional explanation, the unequal attribution of responsibility implies that belief in the controllability of weight is resilient to information to the contrary. Participants may have held obese, high-effort Jenny responsible for her weight to some extent – and stereotyped her accordingly – because they were doubtful about the veracity of her claims to watch her weight, or the length of time she had been doing so. Unlike the presence of a medical condition used in other studies, Jenny’s claimed weight-control effort did not explain her obesity. Thus, participants with a strong belief in the controllability of weight may have attributed responsibility on the basis of previous, long-term unhealthy eating habits, inferred from the fact that Jenny is obese despite currently dieting. While future research is necessary to investigate scepticism as an explanation for the greater responsibility attributed to obese Jenny, such unequal attribution of responsibility remains a potential contributor to obesity stereotyping.

The JSM and attributional model explain negative stereotyping of obese people, but both remain mute in regard to the more subtle form of stigma found in the present study: the tendency not to extend the positive stereotype of a ‘diligent dieter’ to obese individuals. This represents an important inconsistency in perceptions which has been overlooked by research that focuses only on negativity and responsibility. The relative lack of admiration and encouragement for obese people’s efforts to control their weight may go unnoticed by the individuals themselves, while exacerbating the challenges of weight loss.

### 3.3.3 Limitations of the Present Study

A major limitation of the present study was the vignette/survey methodology used. Despite being a mainstay of research into obesity stigma, additional studies are needed to demonstrate whether the relationships between
variables found here persist in a naturalistic setting, and how they influence discriminatory behaviour.

More specifically, external validity may have been limited by the amount and nature of the information on which participants were asked to base their ratings of Jenny. As already discussed in the preceding section, the vignettes did not address many of the characteristics upon which participants rated Jenny. While it was the intention of the study to allow weight bias to influence ratings, the use of such vague vignettes limits conclusions about the strength of any prejudice found. Stereotyping of Jenny may not necessarily reflect deep-seated negative attitudes to obese individuals so much as tentative guesses which participants would readily have revised if given enough detail. A priority for future research will be investigating the prevalence and nature of obesity stereotyping in situations where adequate information is present or obtainable.

The convenience sampling procedure used in the present study limits the generalisability of findings. From the start, the online survey was inaccessible to people without adequate internet technology and skills, or the spare time needed to complete it. Participation would have been most appealing to those with an interest in health research, which, when combined with the ‘snowballing’ recruitment method, raises the possibility that survey invitations circulated among social groups with similar interests – an eventuality akin to the reliance on student participants, frequently-cited as a limitation of psychological research (e.g. Dasgupta & Hunsinger, 2008; Gordon, Slade, & Schmitt, 1986; Puhl & Heuer, 2009). While the present sample includes participants from a range of nationalities and age groups, it would be worthwhile to replicate the study among
specific populations of interest, in modalities which will encourage participation by the subgroups overlooked in the present sample.

3.3.4 Conclusions

Attributions of responsibility for weight were found to play a mediating role in negative stereotyping of obese individuals. While such attributions are made on the basis of weight and weight-control effort, obesity is still perceived as a more controllable outcome than a healthy body weight. An obese individual’s claim to diet and exercise reduces stereotyping by reducing their perceived responsibility for their weight, and inversely, their claim to do neither increases stereotyping by increasing their perceived responsibility for their weight. Responsibility for a healthy weight has relatively little influence, only increasing perceptions of intelligence.

Besides harbouring negativity towards individuals who are seen to deserve their obesity, people are also biased in their reluctance to make positive inferences from obese individuals’ weight control effort. Healthy-weight individuals who claim to diet and exercise are perceived more positively along several dimensions, but because such claims primarily influence perceptions about obese individuals with regard to whether or not they deserve their weight (and its associated negative stereotypes), they are not similarly credited with the characteristics of a keen weight-watcher. This amounts to more negative overall perceptions of obese individuals.

The following chapter will investigate whether these results are replicated when an individual’s weight-control effort is certain rather than claimed. This will determine whether obese individuals were attributed greater responsibility for
their weight due to doubt about the veracity of their weight-control effort, or underlying general beliefs about the controllability of weight.
Chapter 4

Study 2: The Role of Factual Weight-Control Effort on Attribution of Responsibility for Weight, and Stereotyping of Obese People

4.1 Introduction

Study 1 found that perceptions about a given individual are influenced by the interplay between their body weight, their perceived responsibility for it, and their claimed efforts to control it. However, when such weight-control efforts are presented as the individual's own assertion, their veracity is open to question. This is particularly likely for those participants of Study 1 who believe that body weight is entirely or predominantly determined by behaviour. For such participants, the presence of obesity despite high claimed weight-control effort would have seemed incongruous. This raises the possibility that effort did not fully mitigate obesity stereotyping in Study 1 because participants suspected that the obese target woman ('Jenny') was lying or exaggerating when she claimed to diet and exercise.

According to the attributional model of stigma, an obese person who exercises and restricts her food intake should not be stereotyped, because she is not responsible for her obesity and therefore does not deserve prejudice. The justification-suppression model (JSM; Crandall & Eshleman, 2003) of stigma suggests that limiting the opportunity to make such attributions would not diminish underlying prejudice, but may curtail its expression by removing the potential justification that it is acceptable to stereotype Jenny because she is responsible for her obesity.
Despite these predictions, participants' ratings of obese Jenny were more negative than healthy-weight Jenny regardless of her effort (see Section 2.3.4), and obese Jenny was held more responsible for her weight (overall) than was her healthy-weight counterpart (see Section 3.2.1). It is possible that participants' doubted Jenny's honesty when describing her weight-control efforts to her doctor, and this tempered the extent to which they excused her from responsibility for obesity, and its associated stereotypes. Of course, such doubt could not have been complete or unanimous, as effort still significantly reduced attributions of responsibility. But uncertainty remains as to whether this reduction would have been greater, had Jenny's weight-control effort been presented as factual rather than claimed.

Other results reported in the preceding chapters are also consistent with the possibility that participants were sceptical of obese Jenny's claims to diet and exercise. Effort's influence on several perceptions of Jenny was weaker when she was obese than when she was at a healthy weight. This tendency was responsible for all three significant interactions between weight and effort (see Sections 2.3.6 and 2.4.4). Specifically, while strong willpower was credited to obese Jenny for her claims to work hard to control her weight, significantly stronger willpower was credited to healthy-weight Jenny for such claims (see Figure 2.1). Similarly, healthy-weight Jenny was rated as more intelligent and more likely to succeed in her career when she claimed to make an effort to control her weight, while claimed weight-control effort made no difference to these ratings for obese Jenny (see Figures 2.2 and 2.3). When responsibility for weight was tested as a potential mediator in a path model, effort had seven direct effects on perceptions of healthy-weight Jenny, and only one direct effect on perceptions of obese Jenny
(see Section 3.2.2). Effort tended to influence perceptions about obese Jenny by reducing her perceived responsibility for her weight; once again, this is evidence that her claims were not entirely disbelieved. However, the presence of these mediated effects in Chapter 3 raises the question of whether weight-control effort would have been more effective in mitigating stereotyping in Chapter 2 if it had reduced attributions of responsibility for obesity to a greater extent.

Participants' need to preserve their belief in a just world (BJW) may have motivated them to doubt obese Jenny's claims to diet and exercise. The literature on obesity stigma provides ample evidence for the strength and prevalence of belief in the controllability of body weight (see Section 1.11.1), and indeed, participants in Study 1 were no exception; Jenny's weight was generally perceived to be controllable (see Section 3.2.1). Previous studies on prejudice toward obese individuals have employed a vignette methodology similar to that used in Study 1, demonstrating that when obese targets have a medical explanation for their obesity which renders their weight uncontrollable, they are neither held responsible for their weight nor stereotyped negatively. Given that Jenny's weight-control effort did not offer an alternative explanation for obesity as a medical condition would have done, it challenged participants' belief in the controllability of weight, and – more broadly – their belief in a just, consistent and predictable world. Much research exists on the biases in perception, processing and memory by which people preserve such beliefs, often unconsciously. While detailed examples of confirmation bias are beyond the scope of this chapter, Nickerson (1998) provides a review of such research, and cites several examples from history where theory or evidence which ran contrary to prevailing beliefs was rejected without adequate investigation. The correlations
between individual BJW and victim-blaming (see Section 1.13.1), and controllability beliefs and weight stigma (see Section 1.11) provide further evidence that situations are often interpreted in a way that is consistent with one's beliefs. Thus, some participants in Study 1 may have been more inclined to doubt the truthfulness of obese Jenny's claimed weight-control effort than to revise their belief in the controllability of weight, or the notion that each person's outcomes are deserved.

Alternatively, some participants may have doubted the veracity of obese Jenny's claimed weight-control effort in order to permit themselves to express unfounded prejudice toward her. According to the JSM, holding obese people responsible for their weight provides justification for the expression of suppressed anti-fat prejudice. Crandall and Eshleman (2003) state that because the release of prejudice is satisfying, assimilation of information will be biased to support attributions of personal responsibility for stigmatized outcomes. They cited a study by Munro and Ditto (1997) in which participants rated scientific information about homosexuality as less convincing when it was inconsistent with their own attitudes and prejudices.

Whatever their reasons, participants may have perceived dishonesty about weight-control effort to be plausible in the medical context. When talking with her doctor, an obese person may be motivated to exaggerate her efforts to lose weight so as not to receive a lecture on the importance of exercise and healthy eating. She may also wish to avoid stigma from her doctor, by appearing to disconfirm his perceived stereotypes of obese people as lazy and indulgent. Obese people are indeed aware of the stereotypes society holds of them, particularly laziness (Puhl, Moss-Racusin, Schwartz, & Brownell, 2008), and of the
widespread view that they are responsible for their weight (Thomas et al., 2008).
As discussed in Sections 1.3, 1.5, and 1.8, stigma is common in the medical setting; half or more of the obese participants in studies by Anderson and Wadden (2004), Puhl and Brownell (2006), Rand and MacGregor (1990) and Thomas et al. reported having experienced stigma from medical professionals. Furthermore, 8.2% of obese participants in Puhl et al.'s qualitative study listed a medical professional as the source of their 'worst stigmatizing encounter'. Even when satisfied with their own doctors, the majority of obese participants interviewed by Brown et al. (2006) expressed anticipation of stigma when accessing health services. This is not surprising, given that doctors indeed view obese patients as 'lazy' (Bocquier et al., 2005; Fogelman et al., 2002; Foster et al., 2003; Schwartz et al., 2003). Obese people, on the other hand, tend to make external or uncontrollable attributions for their weight (Degher & Hughes, 1999; Hughes & Degher, 1993; Ogden et al., 2001), which may be one reason doctors in a study by Klein et al. (1982) described their obese patients as 'dishonest'. Participants in Study 1 may have arrived at a similar conclusion about obese Jenny's claims to diet and exercise, assuming that the fear of stigma or the desire for approval provided motivation for her to lie to her doctor.

The data from Study 1 do not permit more than conjecture about the hypothesis that participants were sceptical of obese Jenny's weight-control effort. However, as this is a plausible explanation for effort's relative lack of effect on perceptions of obese Jenny, further investigation is justified. Thus, it was the aim of Study 2 to ascertain the influence of such scepticism by replicating Study 1 with weight-control effort presented as factual rather than claimed. This revised scenario would remain externally valid, as it would parallel real-life situations in
which an individual’s dieting and exercise habits are clearly apparent to others – for example, a close friend, housemate or family member.

It was predicted that the obesity stereotyping found in Study 1 would be replicated: that when Jenny was described as obese, she would be rated more negatively along dimensions such as laziness, unattractiveness and unhappiness. It was further hypothesized that this weight stereotyping would be reduced more sharply than in Study 1, if not eliminated entirely, in cases where obese Jenny was described as having put effort into controlling her weight. Responsibility attributed to obese Jenny for her weight should similarly be reduced more sharply by weight-control effort, as this appears to be a mechanism by which obese people are excused from negative stereotyping. Thus, it was hypothesized that unlike in Study 1, responsibility for weight would not be attributed more strongly to obese Jenny than to healthy-weight Jenny, and that overall, her weight and weight-control effort would have a more marked interactive influence over perceptions of her and attributions of responsibility for her weight.

4.2 Method

4.2.1 Sample Recruitment

The methodology of Study 2 was identical to that of Study 1 (see Section 2.2), and likewise approved by the Deakin University Human Ethics Advisory Group. The anonymous online survey attracted 409 respondents. To prevent people from participating twice, the following warning was appended to the Plain Language Statement: ‘Please do not participate if you have already taken part in a similar survey earlier this year. If the questionnaire appears familiar at any time,
you can exit the survey by closing your browser window.’ A similar second warning followed the vignette:

Have you already participated in this study?
If this does not look familiar, please press the "Continue" button.
If you have already completed a similar study to this, please do not continue. You can exit the survey by closing your browser window. Thank you for your time.

4.2.2  Materials

Again, participants were randomly allocated to one of four possible vignettes. The questionnaire remained identical to Study 1 (see Section 2.2.2), with slight modification to the wording of the vignettes to present Jenny’s weight-control effort as factual rather than claimed. This was done by removing several words from the paragraph describing Jenny’s effort, shown below as crossed out. This was done separately for low-effort Jenny:

Jenny told her doctor that she makes no effort to try to control her weight – that she frequently enjoys ‘fattening’ foods, and always finishes what’s on her plate, even if this means overeating when she is served a large portion at a restaurant. She added that she never says no to chocolate or lollies, which happen to be her favourite foods. She said that she does not attempt to burn off excess calories by visiting the gym or playing sport.

And high-effort Jenny:

Jenny told her doctor that she works hard to control her weight – that she carefully avoids fattening foods, and limits the size of her meals, even if this means wasting food when she is served a large portion at a restaurant. She added that she always says no to chocolate and lollies, even though they are her favourite foods. She said that she feels compelled to burn off excess calories by visiting the gym or playing sport.

The vignettes now varied in length from 145 to 150 words. Below is an example of one of the four modified vignettes, describing the obese, high-effort target. For the others, see Appendix B.

Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house.
Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.

Jenny is not at a healthy weight. She currently weighs 85 kilos, and her doctor told her that this means she is very overweight – in fact, she is obese.

Jenny works hard to control her weight – she carefully avoids fattening foods, and limits the size of her meals, even if this means wasting food when she is served a large portion at a restaurant. She always says no to chocolate and lollies, even though they are her favourite foods. She feels compelled to burn off excess calories by visiting the gym or playing sport.

4.3 Results

4.3.1 Data Cleaning

Data were analysed using IBM SPSS Statistics 19 (2010). After the removal of missing data, there were 391 responses. There was significant skew on some of the outcome variables, although no skewness ratio exceeded 6.69 (SE = 0.12). To confirm that non-normality was not a problem due to the large sample size, key analyses were repeated with transformed variables. In all cases, transformations did not affect the significance of results. Consistent with Study 1, all results reported use a conservative significance level of \( p < .01 \). The use of scales eliminated the need to remove outliers.

4.3.2 Sample Characteristics

As in Study 1, the majority of the sample were female (298 female, 89 male, 4 unspecified) and living in Australia (\( N = 336 \)), with an average BMI in the ‘overweight’ category (\( M = 27.83, SD = 7.13 \)). The mean age was 30.80 years (\( SD = 11.32 \) years), and there were equal numbers of current dieters (\( N = 195 \)) and non-dieters (\( N = 195, 1 \) unspecified). Random allocation of vignettes meant approximately equal groups: 101 participants read about obese/high-effort Jenny, 80 participants read about obese/low-effort Jenny, 111 participants read about
healthy-weight/high-effort Jenny, and 99 participants read about healthy-weight/low-effort Jenny.

To permit comparisons between Studies 1 and 2, it was necessary to check for differences in participant characteristics. Independent-samples *t*-tests showed that the samples did not differ in terms of mean age, BMI, and scores on the relevant scales: AFA Dislike, Willpower and Fear of Fat, General and Personal BJW, Self Esteem, Eating Restraint, and Body Dissatisfaction. Chi-square tests showed that the samples did not differ in gender composition, but they did differ in the ratio of dieters to non-dieters. There were fewer current dieters in Study 1 (40.1%) than in Study 2 (49.9%), $\chi^2 (1, N = 762) = 7.61, p < .01$.

### 4.3.3 Potential Confounds

Chi-square tests showed no differences between the four vignette groups in terms of gender or dieting status. A MANOVA was used to test for differences between the four groups’ mean age, BMI, and scores on the relevant scales: AFA Dislike, Willpower and Fear of Fat, General and Personal BJW, Self Esteem, Eating Restraint, and Body Dissatisfaction. The only variable on which the groups differed was their General BJW, $F(3, 381) = 4.63, p < .01, \eta^2 = .04$. There was a significant difference between the highest-scoring group and the two lowest-scoring groups: participants who read about healthy-weight, low-effort Jenny expressed stronger belief in a generally just world ($M = 3.55, SD = 0.74$) than did participants who read about obese, high-effort Jenny ($M = 3.21, SD = 0.71$), $F(1, 198) = 11.41, p < .01, \eta^2 = .05$, and obese, low-effort Jenny ($M = 3.23, SD = 0.61$), $F(1, 177) = 10.03, p < .01, \eta^2 = .05$. The other groups did not differ. Hence, General BJW was tested as a covariate in subsequent analyses, but was not included as a covariate as its influence did not reach significance.
4.3.4 Main Effects of Jenny’s Weight on Stereotyping

A 2 × 2 factorial MANOVA was conducted to assess the effect of Jenny’s weight (obese or healthy-weight) and claimed weight-control effort (high or low) on participants’ endorsement of the 12 descriptive statements. Box’s $M$ was significant, and Levene’s test was acceptable for all DVs except ratings of Jenny’s romantic prospects.

There were several significant main effects of weight, replicating all six found in Study 1; they are presented here in decreasing order of effect size. Compared to healthy-weight Jenny, obese Jenny was perceived as significantly more likely to develop a serious illness in the future, $F(1, 387) = 78.09, p < .001$, $\eta^2 = .17$, less strong-willed, $F(1, 387) = 41.35, p < .001$, $\eta^2 = .10$, less attractive, $F(1, 387) = 36.92, p < .001$, $\eta^2 = .09$, more unhappy, $F(1, 387) = 21.11, p < .001$, $\eta^2 = .05$, more lazy, $F(1, 387) = 20.39, p < .001$, $\eta^2 = .05$, and more emotional, $F(1, 387) = 9.39, p < .01$, $\eta^2 = .02$. There were also three main effects of weight not found in Study 1; compared to healthy-weight Jenny, obese Jenny was perceived as less likely to achieve career success, $F(1, 387) = 16.17, p < .001$, $\eta^2 = .04$, less popular, $F(1, 387) = 14.45, p < .001$, $\eta^2 = .04$, and less intelligent, $F(1, 387) = 6.90, p < .01$, $\eta^2 = .02$. Means and standard deviations are presented in Table 4.1.

4.3.5 Main Effects of Jenny’s Effort on Stereotyping

There were several significant main effects of effort, replicating all six found in Study 1; again, they are presented here in decreasing order of effect size. When Jenny said she made an effort to control her weight, she was rated as more strong-willed, $F(1, 387) = 172.34, p < .001$, $\eta^2 = .31$, less lazy, $F(1, 387) = 114.21, p < .001$, $\eta^2 = .23$, more intelligent, $F(1, 387) = 21.49, p < .001$, $\eta^2 = .05$, and
less likely to become ill in the near future, \( F(1, 387) = 15.98, p < .001, \eta^2 = .04 \),
more unhappy, \( F(1, 387) = 14.30, p < .001, \eta^2 = .04 \), and more likely to achieve
career success, \( F(1, 387) = 13.79, p < .001, \eta^2 = .03 \), than her low-effort
counterpart. Unlike in Study 1, she was also rated as more shy, \( F(1, 387) = 8.18, 
\( p < .01, \eta^2 = .02 \). Means and standard deviations are presented in Table 4.1.
Table 4.1

*Study 2: Mean Endorsement of Descriptions by Target’s Weight and Effort*

<table>
<thead>
<tr>
<th>Description</th>
<th>Obese target, (N = 181)</th>
<th>Healthy-weight target, (N = 210)</th>
<th>High-effort target, (N = 212)</th>
<th>Low-effort target, (N = 179)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(M (SD))</td>
<td>(M (SD))</td>
<td>(M (SD))</td>
<td>(M (SD))</td>
</tr>
<tr>
<td>Jenny is intelligent</td>
<td>6.23 (1.74)*</td>
<td>6.70 (1.76)*</td>
<td>6.85 (1.65)**</td>
<td>6.03 (1.80)**</td>
</tr>
<tr>
<td>Jenny is attractive</td>
<td>5.06 (1.84)**</td>
<td>6.11 (1.63)**</td>
<td>5.65 (1.72)</td>
<td>5.59 (1.91)</td>
</tr>
<tr>
<td>Jenny is not a happy person</td>
<td>4.86 (2.19)**</td>
<td>3.83 (2.18)**</td>
<td>4.70 (2.23)**</td>
<td>3.84 (2.17)**</td>
</tr>
<tr>
<td>Jenny is lazy</td>
<td>4.31 (2.34)**</td>
<td>3.38 (2.51)**</td>
<td>2.75 (2.12)**</td>
<td>5.06 (2.27)**</td>
</tr>
<tr>
<td>Jenny is an emotional person</td>
<td>5.54 (1.76)*</td>
<td>5.04 (1.68)*</td>
<td>5.38 (1.71)</td>
<td>5.15 (1.76)</td>
</tr>
<tr>
<td>Jenny will be successful in her career</td>
<td>5.35 (1.75)**</td>
<td>6.01 (1.58)**</td>
<td>5.99 (1.74)**</td>
<td>5.37 (1.57)**</td>
</tr>
<tr>
<td>Jenny is not a trustworthy person</td>
<td>2.50 (2.13)</td>
<td>2.95 (1.97)</td>
<td>2.81 (2.06)</td>
<td>2.66 (2.05)</td>
</tr>
<tr>
<td>Jenny is a strong-willed person</td>
<td>4.57 (2.23)**</td>
<td>5.87 (2.59)**</td>
<td>6.49 (2.21)**</td>
<td>3.82 (2.05)**</td>
</tr>
<tr>
<td>Jenny is popular</td>
<td>5.36 (1.66)**</td>
<td>5.97 (1.49)**</td>
<td>5.77 (1.55)</td>
<td>5.59 (1.66)</td>
</tr>
<tr>
<td>Jenny will not find a romantic partner</td>
<td>3.12 (2.32)</td>
<td>2.65 (1.87)</td>
<td>2.89 (2.13)</td>
<td>2.84 (2.07)</td>
</tr>
<tr>
<td>Jenny is shy</td>
<td>4.16 (1.92)</td>
<td>4.00 (1.79)</td>
<td>4.32 (1.87)*</td>
<td>3.78 (1.79)*</td>
</tr>
<tr>
<td>Jenny will develop a serious illness in the near future</td>
<td>5.53 (2.15)**</td>
<td>3.66 (2.10)**</td>
<td>4.15 (2.35)**</td>
<td>4.97 (2.20)**</td>
</tr>
</tbody>
</table>

* Ratings differed significantly at \(p < .01\)  ** Ratings differed significantly at \(p < .001\)
4.3.6 Interactions Between Jenny’s Weight and Effort on Stereotyping

There were two significant interactions between Jenny's weight and effort on participants' perceptions of her; both them and their simple effects replicated the two largest interactions found in Study 1. The first was on the perception that 'Jenny is a strong-willed person', $F(1, 387) = 27.25, p < .001, \eta^2 = .07$. The relevant means and SDs are shown in Figure 4.1. When she made an effort to control her weight, healthy-weight Jenny was rated as significantly more strong-willed than was obese Jenny, $F(1, 210) = 81.22, p < .001, \eta^2 = .28$. By contrast, when Jenny claimed to make no effort, weight had no effect on perceptions of willpower. Healthy-weight Jenny was rated as significantly more strong-willed when she claimed to make an effort to control her weight than when she claimed to make no effort, $F(1, 208) = 208.52, p < .001, \eta^2 = .50$. Obese Jenny was also rated as significantly more strong-willed when she claimed to make an effort to control her weight than when she claimed to make no effort, $F(1, 179) = 25.34, p < .001, \eta^2 = .12$. 
Figure 4.1. Mean (SD) ratings of participants’ agreement with the statement, ‘Jenny is a strong-willed person’, by Jenny’s weight and weight-control effort.

The other significant interaction between weight and effort on stereotyping concerned the perception that 'Jenny is intelligent', $F(1, 387) = 7.12$, $p < .01$, $\eta^2 = .02$, as shown in Figure 4.2. When she claimed to make an effort to control her weight, healthy-weight Jenny was rated as significantly more intelligent than was obese Jenny, $F(1, 210) = 17.48$, $p < .001$, $\eta^2 = .08$. By contrast, when Jenny claimed to make no effort, weight had no effect on perceptions of intelligence. Healthy-weight Jenny was rated as significantly more intelligent when she claimed to make an effort to control her weight than when she claimed to make no effort, $F(1, 208) = 30.34$, $p < .001$, $\eta^2 = .13$. By contrast, ratings of obese Jenny’s intelligence did not differ significantly by her claimed weight-control effort.
4.3.7 Effects of Participant Characteristics

The influence of participant attitudes and characteristics on stereotyping of Jenny was tested by including each one in a separate 3-way MANOVA, together with Jenny’s weight and claimed weight-control effort, to assess their effects on participants’ endorsement of the 12 descriptive statements. Continuous variables were dichotomised using a median-split, except in the case of age, where a tercile split was used to maintain consistency with the procedure used in Study 1 (see Section 2.3.7). General BJW was tested as a covariate in analyses, but was not included as its influence did not reach significance. As in Study 1, no three-way interactions were found for any participant variable. Detailed results of these analyses and simple effects are not reported here due to their small effect sizes; no participant variable, or its interaction with Jenny's weight or effort, accounted for
more than 7% of variance in ratings. This was similar to the effect sizes found in Study 1.

Most of the interactions between Jenny's weight and participants' characteristics found in Study 1 were not replicated, with the exception of relatively lower attractiveness ratings of obese Jenny, made by participants who scored higher on the AFA Dislike and Willpower subscales. However, other interactions emerged. Prejudiced ratings were made on measures of Jenny’s strength of will and likelihood of career success by participants with higher AFA Willpower scores. Unlike in Study 1, prejudice was also evident from participants who expressed higher levels of body dissatisfaction and fear of fat, especially in regard to obese Jenny's romantic prospects. Another difference from Study 1 was the presence of gender differences: males were more negative than females in their ratings of obese Jenny's attractiveness and popularity. Comparisons between Studies 1 and 2 in relation to participant characteristics will not be discussed further, as they are secondary to the research questions of the present chapter.

4.3.8 Attribution of Responsibility for Jenny’s Weight

Overall, participants tended to allocate responsibility for Jenny's weight slightly in the direction of controllable factors ($M = 6.57, SD = 2.40$), as they did in Study 1. A two-way ANOVA was conducted to determine the effect of Jenny's weight (obese or healthy-weight) and weight-control effort (high or low) on the extent to which she was perceived as responsible for her weight. As in Study 1, Levene's test was significant, suggesting heterogeneity of variance, but due to the large sample size and absence of outliers, ANOVA was deemed appropriate with a conservative alpha level of $p < .01$. 
Unlike in Study 1, there was no significant main effect of weight; Jenny’s perceived responsibility for her weight did not differ between obese and healthy-weight targets. As in Study 1, there was no main effect of effort.

There was a significant interaction between Jenny’s weight and effort, $F(1, 387) = 59.44, p < .001, \eta^2 = .13$, with the same pattern of simple effects found in Study 1. The relevant means and SDs are shown in Figure 4.3. When she claimed to make an effort to control her weight, healthy-weight Jenny was rated as significantly more responsible for her weight than was obese Jenny, $F(1, 210) = 22.94, p < .001, \eta^2 = .10$. When Jenny claimed to make no effort, obese Jenny was rated as significantly more responsible for her weight than was healthy-weight Jenny, $F(1, 177) = 35.16, p < .001, \eta^2 = .17$. Healthy-weight Jenny was rated as significantly more responsible for her weight when she claimed to make an effort to control it than when she claimed to make no effort, $F(1, 208) = 22.70, p < .001, \eta^2 = .10$. Obese Jenny was rated as significantly more responsible for her weight when she claimed to make no effort to control it than when she claimed to make an effort, $F(1, 179) = 39.86, p < .001, \eta^2 = .18$. Unlike in Study 1, none of the responsibility ratings fell below the scale’s neutral point. Despite significant differences between ratings of the four targets, their weight was each perceived to be determined more by controllable than uncontrollable factors.
Figure 4.3. Mean (SD) ratings of responsibility for Jenny’s weight by her weight and weight-control effort.

4.3.9 Comparing the Studies

To test whether participants’ attribution of responsibility and perceptions about Jenny were significantly different from Study 1, a 3 × 2 factorial ANOVA was performed on the combined data from both samples, to assess whether attribution of responsibility and endorsement of the 12 statements differed by Jenny’s weight (obese or healthy-weight), her effort (high or low), and study (1 or 2). Significant values for Box’s $M$ and Levene’s test were ignored. There were no significant main effects of study number, and study number did not interact significantly with weight, nor effort, nor both. Participants’ overall attribution of responsibility for weight and stereotyping of Jenny did not differ between samples, nor did their use of weight and effort information.
4.3.10 Responsibility as a Mediator of Effort’s Effect on Stereotyping.

To test whether attributions of responsibility for Jenny’s weight mediated the effect of her claimed weight-control effort in a similar pattern to Study 1, a mediation analysis was conducted on each of the 12 descriptions, with effort (high or low) as the independent variable, and responsibility as the proposed mediator, separately for participants who read about obese Jenny ($N = 181$) and for those who read about healthy-weight Jenny ($N = 210$). Following the procedure used in Study 1 (see Section 3.2.2), this was done using path analysis and a bias-corrected bootstrap resampling method (Shrout & Bolger, 2002) within AMOS™ (Arbuckle, 2006).

The significant predictive pathways between effort and responsibility found in Study 1 were replicated. For healthy-weight Jenny, claimed weight control effort positively predicted perceived responsibility, $\beta = .31, p < .01; R^2 = .10, p < .01$, and for obese Jenny, this effect was negative, $\beta = -.43, p < .001; R^2 = .18, p < .001$.

As in Study 1, effort had more direct effects on perceptions of healthy-weight Jenny than her obese counterpart, influencing seven perceptions. Effort had 3 direct effects on perceptions of obese Jenny, two of which were accompanied by partial indirect effects via responsibility for obesity.

For healthy-weight Jenny, the single indirect effect of weight-control effort on ratings of Jenny's intelligence was not replicated; effort's influence on how she was perceived was not mediated by attributions of responsibility for her healthy weight. For obese Jenny, the present study replicated the three largest interaction effects found in Study 1. Unlike in Study 1, responsibility for obesity did not mediate effort’s influence on endorsement of all the obesity stereotypes.
The relationship between obese Jenny’s weight-control effort and her perceived likelihood of illness was wholly mediated by her perceived responsibility for obesity. The relationships between obese Jenny’s weight-control effort and participants' ratings of her laziness and her strength of willpower were partially mediated by her perceived responsibility for obesity. Weight-control effort negatively predicted responsibility for obesity, and responsibility positively predicted perceived laziness and likelihood of illness, and negatively predicted attribution of strong willpower. There were no other mediated effects not found in Study 1. Further comparisons between Studies 1 and 2 in relation to responsibility as a mediator will not be discussed further, as the patterns are similar overall, and the details of minor differences are secondary to the research questions of the present chapter.

4.4 Discussion

Study 2 aimed to investigate whether an individual's weight-control effort would be more effective in reducing attribution of responsibility for obesity and negative obesity stereotyping when such effort was presented as factual, rather than the individual's own claim. Hence, Study 2 was a replication of Study 1 using slightly modified vignettes.

4.4.1 Obesity Stereotyping

As predicted, the results demonstrated similar obesity stereotyping to that found in Study 1. When Jenny was described as obese, she was perceived as significantly more likely to develop a serious illness in the future, less strong-willed, less attractive, more unhappy, more lazy, and more emotional than she was when described as healthy-weight. The negative stereotype applied to obese
Jenny also included three characteristics not found in Study 1: compared to her healthy-weight counterpart, she was perceived as less likely to achieve career success, less popular and less intelligent.

Once again, the effect sizes were modest; Jenny’s weight had the strongest influence on her perceived likelihood of illness, accounting for 17% of the variance. Obesity stereotyping accounted for 10% or less of the variance in participants’ other respective perceptions about Jenny. The mean significant difference in ratings was less than one point on an 11-point scale. Even with the influence of obesity stereotyping, mean ratings of both obese and healthy-weight Jenny fell on the positive side of the scale mid-point on all but three of the dimensions measured, in the same pattern found in Study 1: on average, targets of both weights were perceived as intelligent, attractive, not unhappy, not lazy, likely to achieve career success, and popular. Both obese and healthy-weight Jenny were perceived as emotional, and obesity stereotyping lowered ratings of obese Jenny below the neutral point on her perceived likelihood of illness and strong willpower.

4.4.2 Effort Stereotyping

Participants inferred all the same traits from weight-control effort as they did in Study 1. When Jenny claimed to make an effort to control her weight, she was rated as more strong-willed, less lazy, more intelligent, less likely to become ill in the near future, more unhappy, and more likely to achieve career success. Another effect of effort reached significance in the present study: high-effort Jenny was also rated as more shy.

As in Study 1, Jenny’s effort had a slightly larger effect on how she was perceived than did her weight. Effort accounted for 31% and 23% of the variance
in ratings of Jenny’s strong willpower and laziness respectively, and less than 10% of the variance in all other perceptions, with ratings of both high-effort and low-effort targets falling on the same side of the scale midpoint on all dimensions except strong willpower and laziness.

4.4.3 The Role of Effort in Obesity Stereotyping

Contrary to hypotheses, presenting weight-control effort as certain neither eliminated nor clearly reduced negative judgments of obese Jenny. Jenny's weight and effort interacted to influence only two of the 12 perceptions about her, and these effects replicated the two largest interactions found in Study 1. The influence of effort on these two perceptions of Jenny was still weaker when she was obese than it was when she was at a healthy weight. Effect sizes of these two interactions were modest, as found in Study 1. The difference in effort's influence on perceptions of obese and healthy-weight targets accounted for a maximum of 7% of the variance in ratings.

The largest interaction effect was on the belief that ‘Jenny is a strong-willed person’, as shown in Figure 4.1. This was almost identical to the largest interaction between weight and effort found in Study 1 (see Figure 2.1), and reflects the tendency for weight-control effort to have less influence over perceptions of individuals who are obese. Healthy-weight Jenny was credited with strong willpower for her weight-control effort to a greater extent than was obese Jenny.

The other interaction between weight and effort influenced perceptions that ‘Jenny is intelligent’, as shown in Figure 4.2. Again, this parallels an interaction found in Study 1 (see Figure 2.2). Healthy-weight Jenny was credited with greater intelligence for her weight-control effort, while obese Jenny was not.
It appears that participants are reluctant to infer positive qualities such as intelligence and willpower from the weight-control effort of obese individuals, regardless of whether this effort is claimed, and open to suspicion, or known for certain. The replication of these interactions suggests that scepticism was not the reason participants were less inclined to attribute positive qualities to obese Jenny for her weight-control effort.

The third and smallest of the interactions found in Study 1 (see Figure 2.3) was not replicated. Jenny’s weight and effort did not interact to influence her perceived likelihood of career success. Given that the interaction occurred in Study 1 because effort improved the anticipated career prospects only of healthy-weight Jenny, this accords with predictions that factual effort would influence perceptions of obese Jenny to a greater extent than did claimed effort. However, the small size of the original interaction, and the replication of the other two interactions suggests that this may have been an idiosyncrasy of the sample.

4.4.4 Attribution of Responsibility for Jenny’s Weight

Consistent with the results of Study 1, on average, participants rated Jenny’s body weight as determined more by controllable than uncontrollable factors. However, the present study’s findings differed in that weight had no main effect on attribution of responsibility; unlike in Study 1, obese Jenny was not rated as more responsible for her weight than her healthy-weight counterpart. Thus, it is possible that the greater responsibility attributed to obese Jenny in Study 1 was due to doubt about the veracity of her weight-control effort; hence its absence in the present study. Alternatively, it may have been an idiosyncrasy of the sample, given its small effect size, and the fact that ratings fell towards the ‘controllable’ side of the scale for all targets in the present study. Or, the main
effect of weight may not have been replicated because participants attributed more responsibility to healthy-weight Jenny than they did in Study 1.

As predicted, the present findings replicated the interaction between weight and effort found in Study 1. Participants attributed responsibility for weight on the basis of congruence between Jenny’s weight and her effort to control it. Obese Jenny was perceived to be more responsible for her weight when she did not diet or exercise, while healthy-weight Jenny was perceived to be more responsible for her weight when she did (see Figure 4.3). Contrary to predictions, presenting weight-control effort as fact rather than claim did not make this effect larger than its parallel in Study 1; the interaction accounted for 13% of the variance in responsibility ratings.

4.4.5 Conclusions

Taken together, the results of Studies 1 and 2 do not support the possibility that participants doubted the veracity of obese Jenny’s claimed weight-control effort in Study 1. This is because essentially the same pattern of results was obtained in the present study when her weight-control effort was presented as a fact, rather than a claim. The mediation analysis in the previous chapter demonstrated that an obese individual’s weight-control effort reduces (albeit incompletely) their perceived responsibility for their weight, which in turn reduces (albeit incompletely) negative, stereotypical perceptions of the individual. In both studies, the positive, effort-related stereotypes of a weight-watcher were not applied so completely to an obese individual as they were to a healthy-weight individual. Thus, it can be concluded that such incompleteness is not explained by scepticism, and is more likely a consequence of raw prejudice.
The findings of the present study are more supportive of the JSM than the attributional explanation of prejudice. While attribution of responsibility was based on congruence between weight and effort, some weight stereotyping occurred even in cases where the target clearly did not deserve to be obese, and her efforts to lose weight were not open to question. Participants may have justified such stereotyping by maintaining their belief in the controllability of weight, and attributing a ‘minimum’ level of responsibility to Jenny; all targets in the present study were held more responsible than not. However, with no opportunity to doubt Jenny’s effort, participants’ only justification for making such attributions was the anonymous, inconsequential nature of the survey. As discussed in Section 3.3.2.8, an anonymous test via computer is a situation in which people are not motivated to respond in a socially-desirable manner (Evans & Miller, 1969), and thus, can be conducive to the expression of prejudice. Endorsement of racial stereotypes is higher in private, anonymous conditions (Crosby et al., 1980), especially among people who hold stronger prejudices (Devine, 1989; Devine & Elliot, 1995), and who are otherwise motivated by external factors, such as the opinions of others (Plant & Devine, 1998).

The results of both studies are at odds with previous findings obtained using the medical explanation paradigm. In similar anonymous vignette studies, obese individuals with a medical explanation for their obesity are not held responsible for their weight, nor stereotyped negatively (DeJong, 1980; DeJong, 1993; Menec & Perry, 1998; Mushier-Eizenman et al., 2004; Weiner et al., 1988). Providing information about an individual’s earnest efforts to lose weight did not achieve a similar reduction in stereotyping and attribution of responsibility, even when participants were not given an opportunity to dismiss such information as
untrue. This raises the possibility that in previous research, participants may have been reluctant to stereotype obese people with a gland disorder due to feelings of pity. The ‘norm-to-be-kind’ to the disadvantaged, described by Hastorf, Northcraft, and Picciotto (1979), leads people to make less negative, or more positive evaluations of disabled individuals (Gibbons, Stephan, Stephenson, & Petty, 1980). For example, participants in a study by Sigall and Page (1972) resisted making negative evaluations of a purposefully obnoxious confederate when he was presented as disabled. They only rated him negatively when he was presented as non-disabled, or when they thought their truthfulness was being monitored by a polygraph, in a ‘bogus pipeline’ condition. It is possible that obese targets with a medical diagnosis likewise elicited participants’ sympathy in previous studies, and it was this ‘norm-to-be-kind’ that protected them from negative evaluations, regardless of perceived responsibility for weight.

Overall, it appears that attributions of responsibility for stigma are not the source of prejudice, and, in accordance with the JSM, the inverse may be closer to the truth. Knowledge than an obese person works hard to control their weight may partially reduce attributions of responsibility for it – and thus, partially reduce obesity stereotyping – but perceptions are still influenced by unjustified anti-fat prejudice.
Chapter 5

General Discussion

The present research investigated how stereotyping of obese individuals is influenced by information suggesting that they make an effort to control their weight, and whether perceived responsibility for their weight accounts for this influence. The broader purpose was to gain insight into the origins of widespread prejudice against obese people – to clarify whether they are perceived negatively on the basis of their weight itself, the belief that they personally 'deserve' to be obese, or the unhealthy lifestyle that is often assumed to underlie obesity.

In the two studies conducted, participants read a short vignette describing 'Jenny', a hypothetical individual who varied in weight (obese or healthy weight) and level of claimed weight-control effort (currently dieting and exercising regularly to control her weight, or unconcerned about her weight, inactive, and fond of fattening foods). Participants then made scale ratings of her responsibility for her weight, rated their agreement with a variety of descriptions of Jenny (e.g. ‘Jenny is intelligent’), and completed a background questionnaire about their own characteristics, attitudes and behaviours which may be relevant to obesity stigma. A subsequent study was conducted with Jenny's weight-control effort presented as fact, to investigate the possibility that participants in the first study had doubted her claims of weight control. Before discussing the implications of the results, the main findings are summarized below.
5.1 Summary of Results

Across both studies, evidence of obesity stereotyping was found. Compared to her healthy-weight counterpart, the obese individual was considered more likely to become seriously ill in the near future; perceived as relatively less attractive; less strong willed; more lazy; more unhappy; more emotional; less likely to achieve career success; less popular; and less intelligent.

Greater responsibility for weight was attributed when weight was congruent with effort – that is, for the healthy-weight individual who made efforts to control her weight, and the obese individual who did not make efforts to control her weight. It was found that perceptions of responsibility mediated the relationships observed between weight-control effort and most stereotyping of obese individuals. On the whole, the obese individual who diets and exercises was perceived as less responsible for her obesity, and in turn, this lower responsibility predicted lower levels of obesity stereotyping. The indirect nature of this process may explain the persistence of stereotyping in cases where an obese person works hard to control their weight. Effort to lose weight did not entirely excuse the obese individual from attributions of responsibility for her weight, and lower perceived responsibility for obesity predicted only a moderate reduction in stereotyping. Doubt about the truth of the obese individual's claims to diet and exercise did not limit the influence of such claims, as the same pattern of perceptions occurred regardless of whether her weight-control effort was known or claimed. These results suggest that negative stereotyping of obese people is – at least partially – dependent on the perception that they are responsible for their obesity.
Weight stereotyping was stronger among people with certain beliefs and characteristics, but this was often definitional and hardly surprising: those with a strong, general aversion to fat people perceived the obese individual more negatively, and those who strongly believe that weight is controllable tended to presume she was lazy or lacking in willpower. These minor individual differences also reflect social and reproductive pressures; males, young adults and non-overweight people perceived the obese individual as less attractive. Stereotyping was mostly independent of participants' own eating habits and self-esteem.

The present research also demonstrated a new kind of prejudice that has not been reported previously in the literature on obesity stereotyping. Dieters were perceived positively, but the obese individual who dieted and exercised was not credited with the typical characteristics of a dieter – for example, strong willpower and intelligence – to the extent she would have been if her weight was within a healthy range. This was a robust effect across two samples, and both claimed and factual presentation of effort information. This may have occurred because obesity is perceived to be incompatible with the stereotype of an energetic weight-watcher, or more broadly, incompatible with any superior qualities. Alternatively, this may be definitional: the qualities of a good dieter may be credited on the basis of successful weight control, rather than attempted (but so far unsuccessful) weight-control. This effect may be compared to Latner et al. ’s (2012) finding that lean individuals were perceived as less attractive – to the same extent as obese individuals – if they were described as being formerly obese prior to weight loss. Taken together, theirs and the present results indicate that the stigma of obesity can influence perceptions even when there is evidence that the individual in question looks or behaves in counter-stereotypical ways.
5.2 General Implications

The present research was unique in its presentation of individual weight-control effort in a vignette study of obesity stereotyping. Previously, similar studies have demonstrated stereotyping by comparing ratings of target individuals who differ only in weight (see Section 1.10). Others have highlighted the importance of perceived responsibility for obesity by comparing ratings of targets with and without a medical explanation for their obesity (see Section 1.11.4). Such studies make no mention of their targets' eating habits, level of physical activity, or intentions to lose weight. They create a ‘black or white’ situation where people are assumed to be responsible for their obesity – and stereotyped – unless a medical condition excuses them entirely. The present research measured stereotyping and attribution of responsibility in more ambiguous situations, where an individual's weight may be at odds with their behaviour. Weight-control effort is especially relevant to obesity stereotyping, as physical inactivity and poor diet are the behaviours by which people may be presumed to be responsible for excess weight, and stereotyped accordingly. Thus, clearly describing the presence or absence of such behaviours permitted measurement of their influence on stereotyping, both directly and via their influence on attributions of responsibility.

The situations described in the present vignettes are valuable in their relevance to real-life individuals. Dieting and efforts at weight-control are more common than instances where a person has a known medical reason for their obesity, and, unlike previous studies, the present results could not have been influenced by participants’ pity towards people with a diagnosed illness or disorder (see Section 4.4.5). Genetic and biological determinants of weight mean that even without a medical condition, some people are predisposed to obesity
despite exercising and eating healthily (Bouchard, 1994; Price, 2002). Some obese people attempt diets – sometimes extreme diets – in order to escape stigma by losing weight (Neumark-Sztainer et al., 2002; Thomas et al., 2008), often with little success (Ikeda et al., 2004; Mann et al., 2007). This research offers insight into whether their efforts make a difference to the responsibility and negative characteristics usually attributed to obese people when their eating and exercise habits are unknown.

The present results also offer insight into the perceptions underlying the effort-related differences in discrimination found in a naturalistic study by King et al. (2006). Until now, theirs had been the only investigation of obesity stigma to measure the effect of an individual’s efforts to lose weight. They observed that sales clerks showed ‘interpersonal discrimination’ – for example, less smiling, friendliness and eye contact – towards confederates posing as obese customers, but only when the latter drank from an ice-cream beverage and claimed not to diet. Obese confederate customers who drank from a diet beverage and claimed to be on a diet were treated similarly to healthy-weight confederate customers.

Although the expression of any negativity in King et al.’s (2006) study was constrained by the workplace setting, it provides an example of how the prejudiced perceptions reported in the present study might influence how one responds to real individuals. It may be inferred that the sales clerks’ more ‘unfriendly’ tone taken towards non-dieting obese customers reflects the attitudes and perceptions observed in the present research, as the obese target individual in the present studies was explicitly rated more negatively than her healthy-weight counterpart, and her claims of weight-control effort also mitigated such negativity.
The absence of interpersonal discrimination toward obese dieters in King et al.’s (2006) study suggests that some prejudice may have been suppressed. While some stereotyping persisted despite the obese individual’s weight-control effort in the present study, the sales clerks observed by King et al. treated obese dieting customers similarly to healthy-weight customers. There are several explanations for this. Perhaps the level of interpersonal discrimination against obese dieters was too subtle to be detected by King et al.’s observational measures, and/or the workplace expectation of friendliness diminished the expression of weaker prejudice. Alternatively, it could be explained by the relative availability of justification: people may be more motivated to hide their disdain when an obese person explains that they are dieting, especially in the context of a fashion store.

Another strength of the present research was its inclusion of positive characteristics alongside the negative descriptions used to measure stereotyping. For example, participants were asked to rate the target individual on her strong willpower and likelihood of career success, as well as her laziness and likelihood of ending up without a romantic partner. This range of descriptions – both positive and negative, rather than only neutral and negative – allowed illustrative comparisons between perceptions of individuals who vary in weight and weight-control effort. Consequently, the present research was able to identify some of the positive characteristics attributed to those who make an effort to control their weight – and the tendency to withhold such positive effort-based stereotyping from obese individuals.
5.3 Theoretical Implications

The present findings are valuable in their relevance to current theories on the role of attributions of responsibility in prejudice. According to the attributional model, weight is regarded as controllable, and obese people are stereotyped negatively and discriminated against because they are considered responsible for their obesity (see Section 1.11.2). On the other hand, the justification-suppression model (JSM) posits that obese people are perceived negatively whether or not they are seen as responsible for their weight; attributions of responsibility merely provide a means of justifying the experience of prejudice to oneself, or its expression to others (see Section 1.12.2).

In accordance with both models, responsibility for obesity was found to exert significant influence over stereotyping of obese individuals. In Study 1, the obese individual was perceived as more lazy, more emotional, and less strong-willed than the healthy-weight individual, and her claims to diet and exercise only mitigated these negative stereotypes via reduced attributions of responsibility for her obesity – an example of full mediation. A telling example of the importance of perceived responsibility to obesity stereotyping was present in both studies. The perception that the obese individual is likely to become seriously ill in the near future was not directly reduced by the knowledge that she works hard to control her weight. Rather, weight-control effort only improved the predicted health outcomes of the obese individual by excusing her from responsibility for obesity. This is surprising, given that the extent to which a person deserves their obesity is a subjective judgment with no direct relevance to health, while it is healthy eating and exercise that convey actual health benefits (WHO, 2004). Interestingly, participants recognised the value of these behaviours with regard to
the healthy-weight individual: weight-control effort directly lowered perceived likelihood of illness. This finding suggests that the poor health assumed to accompany obesity is a component of the stereotype, and that stereotyping of obese people is contingent on the perception that they deserve their weight. This accords with both models of prejudice, as responsibility could have either inspired such negative perceptions, or justified their expression.

Support for the JSM over the attributional model may be tentatively inferred from the present finding that attributions of responsibility for weight were not central to all negative perceptions of obese individuals. In both studies, the perception that the obese individual is less attractive was not influenced by her weight-control effort or her perceived responsibility for obesity. Assuming that such ratings represent stereotyping rather than an independent cultural preference for thinness (as discussed in the following paragraph), this finding refutes the attributional model’s contention that responsibility for stigma is the foundation of prejudice, but accords with the JSM’s notion that there may be other justifications for expressing unfounded prejudice. Perhaps participants felt no need to suppress biased judgments of attractiveness, even when the obese individual does not ‘deserve’ their obesity. Attractiveness is, by definition, a subjective judgment, and this may have provided sufficient justification to stereotype obese people as less attractive – especially on an anonymous survey. Judgments of both health and beauty could be made on the basis of weight alone, without justification or reference to individual responsibility for weight. With this in mind, the finding that attributions of responsibility for obesity did not influence perceptions of attractiveness, but increased an individual’s perceived likelihood of serious illness
suggests that more ‘severe’ stereotypes may require more justification. This is a potential direction for future research.

With regard to the preceding discussion, it is worthwhile to note that the relevance of attractiveness judgments to models of stigma is contingent on such perceptions being part of the prevailing obesity stereotype, rather than merely reflecting a cultural preference for thinness that is unrelated to prejudice against obese individuals. Indeed, the impact of body weight on perceived attractiveness may be culturally-determined. Research has found that unlike Western culture, many or most cultures consider a 'plump' female body shape to be the most attractive (Anderson, Crawford, Nadeau, & Lindberg, 1992; Brown & Sweeney, 2009), and these differences persist even while other preferences for female attractiveness remain constant across cultures (Cunningham, Roberts, Barbee, Druen, & Wu, 1995). However, the same could be said for other perceptions besides attractiveness: cultural differences have also been found in endorsement of obesity stereotypes such as laziness, ambitiousness, depression, low willpower, poor education, weakness and unhealthiness (Jackson and McGill, 1996). And although not all cultures place such a strong negative value on obesity as does Western society (Crandall & Martinez, 1996; Crandall et al., 2001), stigma towards extremely overweight people is present in cultures where some degree of plumpness is traditionally preferred (Brewis, Wutich, Falletta-Cowden, & Rodriguez-Soto, 2011). It is uncertain whether the lower attractiveness attributed to obese individuals in the present study represents prejudice or cultural ideals, as such influences may overlap and interact. Thus, the support they lend to the JSM remains to be confirmed by future research that controls for cultural influences.
and takes account of the association between perceptions of attractiveness and other characteristics.

### 5.4 Practical Implications

The obesity stereotyping observed in the present research was subtle. For the most part, perceptions of both obese and healthy-weight individuals remained positive, even when significant stereotyping occurred. In both studies, stereotyping lowered only two perceptions into the realm of negativity: the obese individual was perceived as lacking strong willpower and likely to become seriously ill in the near future. Rather than being a weakness of the research, this subtlety reflects the insidious manner in which anti-fat prejudice finds expression in real life. King et al. (2006) provide an example of this: the sales clerks in their study did not overtly discriminate against obese confederate customers. In fact, the general unacceptability of outright prejudice – especially in a workplace setting – was these authors’ rationale for focusing on nonverbal and linguistic biases. Thus, while the present results suggest only minor (but significant) differences in perceptions of obese and healthy-weight individuals, and scale ratings do not consistently predict overt behaviour (Agell & Rothblum, 1991; Klassen et al., 1993; Peternelj-Taylor, 1989; Wigton & McGaghie, 2001), the slight prejudice found here may still influence unconscious behaviours. Subtle, or 'everyday' discrimination can occur in situations where overt discrimination is forbidden by laws, rules, or social norms, and can have a negative impact on interactions and people (Babad, Bernieri, & Rosenthal, 1989; Deitch et al., 2003).

Given that even subtle stereotypes may find unconscious expression in interactions, a question for this research is whether reducing responsibility for
obesity – on the individual level – could be an effective means of reducing stereotyping? While conclusions of causality must remain tentative due to the studies’ between-subjects design, the results suggest that excusing obese individuals from responsibility for their weight may be a more efficient means of reducing obesity stereotyping than challenging the specific stereotypes directly, as it appears to reduce multiple negative perceptions. Providing information that an obese person restricts their eating and exercises regularly is one way of achieving this, and is more relevant to those without a medical diagnosis to which their obesity may be attributed.

Unfortunately, the process of stereotype-reduction inferred from the present results is not a complete solution. Even when an obese individual’s weight-control effort means their weight is attributed to uncontrollable factors, biased judgments of their attractiveness are unaffected, and they are still perceived more negatively overall. Furthermore, obese people are still attributed some responsibility for their weight, even when they work hard to control it.

There is also the risk that even when an individual’s weight-control effort excuses them from attributions of responsibility for obesity, other factors may justify the expression of prejudice. Familiarity may be one of them, as suggested by Puhl, Moss-Racusin, Schwartz, and Brownell’s (2008) finding that obese people frequently experience the worst stigma from peers, friends and family. Presumably, those who are close to an obese person would be aware of their level of weight-control effort and their personality, and would not be reliant on stereotypes to supplement vague information like that provided to participants in the present research. The persistence of stigma in close relationships highlights
the potential for other factors besides attributions of responsibility to influence the expression of prejudice.

Although the present findings suggest one means by which obese individuals may be excused from attributions of responsibility and negative stereotyping, this does not address the general prejudice underlying the existence of such beliefs and stereotypes. Stereotypes are, by definition, generalisations about a stigmatized group, and the general stigma of obesity is not diminished or justified by the key finding that most obesity stereotypes are applied to individuals who are seen as responsible for their obesity.

Prejudice may take other forms besides negative stereotyping, and the present findings demonstrated one of them: hesitance to credit obese individuals with the positive characteristics otherwise attributed to dieters. This was a strong effect; obesity offset effort-based stereotyping to a greater extent than effort offset obesity stereotyping. This tendency offers unique insight into one of the challenges faced by obese dieters. Besides contending with the discrimination and rudeness that cause some obese people to avoid exercising in public (Bauer et al., 2004, Faith et al., 2002; Rosenberger et al., 2006; Storch et al., 2007; Vartanian & Shaprow, 2008), they may be discouraged by others’ failure to acknowledge their identity as an energetic weight-watcher, and its associated virtues. As this bias is relative, but not overtly negative, it may not reach conscious awareness, while removing one of the psychological incentives of continued weight-loss effort – admiration – or even subtly implying an expectation of failure. This could contribute to the difficulties experienced by obese people in pursuing and maintaining weight loss, and highlights the value of supportive environments such as weight-loss groups whose purpose is mutual encouragement.
Despite its focus on stereotyping of individuals, the present research may hold relevance for changing negative views of obese people as a group. Of particular interest was the finding that responsibility for weight is attributed on the basis of information about each person’s weight-control effort, even when such information is inconsistent with strong belief in the controllability of weight. People appear to pay attention to the situations of individuals before applying general schemas, and this raises the possibility of bidirectional influence. Geier et al. (2003) made this suggestion – that beliefs about the controllability of weight can be changed by observing individual cases – when exposure to diet advertisements strengthened their participants’ belief that weight is controllable. Latner et al. (2012) found that observing individual circumstances may also have a mitigating effect on prejudice; general dislike for obese people was stronger among participants who had read about an individual who had lost weight, than it was among those who had read about a weight-stable individual. Thus, if people observe enough instances of ‘undeserved’ obesity, it may lead them to question or dismiss the prevailing stereotype of obese people as lazy, indulgent and responsible for their excess weight. For this reason, obese people could be encouraged to talk about their weight-control efforts regardless of their apparent success or failure. More broadly, encountering obese individuals who defy any aspect of the stereotype – for example, unattractiveness, unhappiness or emotionality – may also lead people to revise their generalisations. The present results offer support for these speculations by demonstrating that attributions of responsibility are based on all the available facts, and stereotypes are not always applied blindly. However, any large-scale change is likely to be gradual, as the weight-loss industry has a vested interest in promoting belief in the controllability
of weight. Obese individuals must also contend with people’s reluctance to
recognise their weight-control effort as evidence of energetic qualities, alongside
other biases toward stereotype confirmation (for a review, see Nickerson, 1998),
and the intimidating influence of stereotype threat (Seacat & Mickelson, 2009;
see Section 1.9.3).

5.5 Limitations

The generalisability of the present findings is limited by the choice of
target. Perceptions may have been different – and differentially affected by
weight – if the target had been representative of a different population, such as
males, parents, or older age groups. Furthermore, stereotyping may have been
more pronounced if the weight difference between targets had been greater – for
example, by comparing a seriously obese individual to an underweight individual.
The target’s physical and social characteristics were chosen to reflect a group for
whom weight concerns are particularly salient to both themselves and others (see
Section 2.2.2.1). In surveys of obesity stigma in real life, weight-based
discrimination is most frequently experienced by young women (Carr &
Friedman, 2005; Puhl, Andreyeva, & Brownell, 2008), particularly from strangers
(Falkner et al., 1990). The obese target’s weight was chosen as a minimum degree
of obesity from which generalisations may be made to heavier individuals, who
are stigmatised more strongly (Blumberg & Mellis, 1980) and more frequently
(Carr & Friedman; Falkner et al.; Jasper & Klassen, 1990; Myers & Rosen; Puhl,
Andreyeva, & Brownell; Puhl & Brownell, 2006; Roehling et al., 2007;
Rothblum, 1996). ‘Healthy weight’ was chosen as a comparison to prevent the
influence of thinness stereotyping, and to illustrate the impact that 20kg of body
weight can have on perceptions of the same person. The present study allows this comparison to be made in isolation from potential confounds, but individual characteristics and situational factors are likely to influence judgments of real people, alongside the variables investigated here.

The generalisability of the present findings is limited by the convenience sampling method used. The online delivery of the survey made it possible to recruit a large sample, but, as discussed in Section 3.3.3, participation was contingent on internet access, English fluency, exposure to the studies’ advertising, time availability, and inclination to take part. These factors, and the invitation to participate in an unpaid, anonymous survey ‘on health-related attitudes’, would have presumably attracted participants who are more educated and less busy than average, and who share an interest in health and/or psychology. Males were under-represented, limiting the potential to identify gender differences. Despite these issues, respondents were drawn from a wider range of age groups than the student populations frequently sampled in psychological research, and they expressed a diversity of opinions and attitudes. As anti-fat prejudice has been found to correlate negatively with level of education (Hilbert et al., 2008), it is plausible to infer that the prejudice demonstrated in the present study may be stronger in the general population. Future studies would benefit from the use of different delivery methods and incentives for participation in order to attract a more representative sample.

The anonymity and isolation inherent in the present study’s methodology present many limitations to external validity. Scale ratings of one hypothetical individual may be unrelated to real-life perceptions, and their relevance to actual behaviour can only be inferred from studies that use naturalistic measures, such as
King et al. (2006), or Bessenoff and Sherman (2000). Participants completed the survey without social pressure to justify, express or suppress prejudice, which can have a powerful impact on displays of prejudice in real life (Zitek & Hebl, 2007), and stereotyping of obese people on anonymous questionnaires (Puhl et al., 2005). The target described in the vignette was evaluated on the basis of very little available information, and responses had no consequences for her or the evaluator. As such, the present research informs only the literature on cognitive prejudice. Research that combines self-report measures and naturalistic observation would be valuable in illustrating how the prejudice found here might be expressed interpersonally.

A related limitation of the present studies’ artificial context was the minimal amount of information provided to participants. As discussed in detail in Section 3.3.2.8, stereotyping may have been exacerbated by the vignette’s emphasis on weight, and relatively vague, neutral description of the target’s other characteristics. The vignettes were largely irrelevant to the descriptive statements about the target, while the scales used to measure participants’ agreement with them conveyed the expectation of varied ratings. The instruction not to think deeply about responses may have further promoted heuristic processing, and in this way, participants were encouraged to base their evaluations on weight and effort. Although this was the intention of the research, care must be taken when drawing conclusions from a survey which was designed to allow the expression of prejudice and minimise other influences. People’s perceptions of actual obese individuals are likely to be much more careful and informed, and thus, less reliant on stereotypes. For example, compared to other perceptions, prejudice had relatively less impact on ratings of responsibility for weight, for which there was
enough information to make fair judgments. This does not mean that similar, low-information situations do not occur in the real world – just that the present findings may not generalise to cases when an individual's personality is known, or evident.

A limitation of the between-subjects one-trial design used in the present study is the inability to draw definite conclusions about causality from mediation analyses. The provision of effort information was a condition, not an intervention; thus, findings remain correlational. In each mediated model, significant paths represent correlation rather than causation. While the order of measures permits tentative inferences of causality, a future step for researchers investigating effort and responsibility as a means of reducing obesity stigma is to test such inferences by way of a within-subjects design, which would offer greater insight into whether individuals change their standards when evaluating obese and healthy-weight targets. The converse relationships between responsibility and stigma proposed by the JSM and attributional model of prejudice highlight the need for experimental evidence in the field.

5.6 Recommendations for Future Research

The findings of the present study raise a number of questions for future research into the stigma of obesity. It is possible that bidirectional feedback may occur between attitudes to obese people in general, and the extent to which such attitudes apply to – or ‘fit’ – obese individuals one encounters in real life. As already discussed, exposure to information about individuals who have successfully lost weight has been found to strengthen general belief in the controllability of weight (Geier et al., 2003), and predict greater anti-fat attitudes
(Latner et al., 2012). This raises the question of whether controllability beliefs – and thus, prejudice – may be weakened by observing individuals who unsuccessfully struggle with their weight. This is a worthwhile question for future research into stigma reduction. The present findings are encouraging, as they demonstrate the importance of attributions of responsibility in obesity stereotyping, as well as people’s readiness to withhold such attributions from individuals who clearly do not deserve their obesity.

One possible means by which to study the influence of individual cases on general attitudes is by examining how relationships with obese people pertain to anti-fat prejudice. Despite the stigma from friends and family reported by obese participants in Puhl, Moss-Racusin, Schwartz, and Brownell’s (2008) study, other findings suggest that relationships with obese people predict less prejudice. Geier et al. (2003) observed that anti-fat bias was lower among participants who reported having an emotionally close relationship with an obese person. Likewise, Chambliss et al. (2004) found lower anti-fat scores among their participants who had a family history of obesity and an obese friend. Findings are mixed, however: Schwartz et al. (2003) observed significant correlations between explicit anti-fat bias and number of obese friends but not obese family members, and Schwartz et al. (2006) found that neither obese friends nor family members influenced anti-fat attitudes. Interaction with obese people on a professional level does not appear effective in reducing bias, as evidenced by the prevalence of weight discrimination in the workplace and healthcare settings (see Section 1.8). Hoppe and Ogden (1997) found that among nurses, experience with obese patients did not affect beliefs and attitudes to obesity, and Blumberg and Mellis (1980) observed no improvement in attitudes among medical students, following 8 weeks
of direct contact with obese patients. In the absence of a reliable trend, it is plausible that the influence of relationships with obese people on anti-fat prejudice appears to depend upon the depth, quality and context of the interactions. Of particular interest, in light of the present findings, is the possibility that prejudice is weakened only by relationships with obese people whose personality and behaviour challenge prevalent stereotypes and controllability beliefs. This is another topic for future survey research.

The external validity of the present study was limited by the amount and nature of information on which participants were asked to base their judgments, and this presents a range of questions about when and how stereotypes are applied to individuals. Given that knowledge of an obese individual’s weight-control effort was enough to attenuate the perception that she was personally responsible for her obesity, it would be informative to identify other conditions under which knowledge of an individual’s situation and characteristics render reliance on stereotypes unnecessary. As discussed in detail in Section 3.3.2.8, stereotypes are heuristics that serve to ‘fill the gaps’ in knowledge of individuals (Bodenhausen, Sheppard, & Kramer, 1994; Davison & Burke, 2000; Tosi & Einbender, 1985). Thus, research is needed to clarify whether – and how – they are applied when their inaccuracy is evident. For example, if the target in the present study had been described unequivocally as an energetic career woman, would ratings of her laziness, willpower and career potential still have been influenced by weight? Would other, unrelated aspects of the obesity stereotype be applied? And if an obese person is stereotyped initially, are such perceptions revised when they display counter-stereotypical traits? As personality is often more obvious than
dieting and exercise habits, studying the resilience of obesity stereotypes is particularly relevant to impression-formation in real life.

A related area for future research to consider is how people respond when given the opportunity to seek out additional information on which to base their impressions of an obese individual. While the present results suggest that knowledge about an obese individual appears to limit prejudice’s influence on how they are perceived, the inclination to pursue such knowledge may be biased in favour of confirming stereotypes. Johnston and Macrae (1994; Johnston, 1996) have found that prejudiced people form biased impressions of individuals by seeking out only information that is consistent with their stereotypes. In real-life interactions, there may be more evidence available – if not immediately apparent – from which to infer the traits measured here, and it would be worthwhile to investigate whether such evidence is sought out and/or taken into account to the same extent, and with the same level of impartiality, as was weight-control effort in the present studies. So far there has not been any research on the role of information-seeking in obesity stereotyping.

An area of research not addressed by the present studies is the presence of implicit prejudice against obese individuals. So far, the Implicit Associations Test (IAT; Greenwald et al., 1998; see Section 1.7) and similar measures of unconscious prejudice have only been applied to perceptions of groups. However, even general implicit bias has demonstrated good prediction of actual behaviour towards individuals (Bessenoff & Sherman, 2000; Poehlman et al., 2004; see section 1.10.6). Thus, it remains unknown whether the obesity stereotyping observed in present and past research is accompanied by negative implicit attitudes towards specific individuals. This gap in the literature could be
addressed by including implicit measures such as the IAT in vignette studies similar to those reported here. Such measures would also permit investigation of implicit attributions of responsibility for weight. The present research demonstrated the importance of perceived responsibility for weight in explicit stereotyping, but questions remain about the role of implicit perceptions and attributions. Does individual weight-control effort excuse obese individuals from implicit responsibility for their weight? Are they still stereotyped implicitly? Are implicit attributions and perceptions affected in the same pattern when an obese individual has a medical explanation for their obesity? Do implicit attributions predict explicit attributions and stereotyping? Or do implicit measures tap underlying perceptions, which, according to the JSM, can be suppressed when a person does not deserve their weight? Existing research suggests that implicit general anti-fat attitudes can be modified by providing information about the causes of obesity (O'Brien et al., 2010; Teachman et al., 2003), but there is a need for further research into the complex relationships between implicit and explicit attributions and attitudes concerning individual obesity.

Another potential influence on prejudice which is yet to be studied with regard to obese individuals is social consensus. As discussed in Section 1.12.1, this refers to the extent to which certain attitudes are considered normative, and it has been found to have a significant and lasting impact on the expression of general anti-fat attitudes. Information that others hold positive views of obese people has been found to reduce expressed prejudice across time and different contexts in studies by Puhl et al. (2005) and Zitek and Hebl (2007). The latter researchers also observed stronger prejudice among participants who were led to believe that others take a negative view of obese people. Thus, social consensus
may be conceptualised within the JSM, as an impetus to suppress prejudice, or as a justification to express it. Perhaps most interesting of all was Puhl et al.’s finding that telling participants that others perceive obese people positively had the consequence of decreasing their beliefs in the personal controllability of obesity – another facet of the complex relationship between attributions and attitudes. The influence of social consensus when making judgments of obese individuals is yet to be investigated. It was beyond the scope of the present research to ask participants about their perceptions of others’ attitudes, or to include descriptions of fictional individuals’ responses to the target. However, as real-life stereotyping takes place within a social context, it would be worthwhile for future research to investigate whether interpretation of an obese person’s weight-control effort depends upon others’ reactions, or anticipated reactions.

An issue that deserves further research is whether the stability of an individual’s obesity determines the extent to which he or she is stigmatized. Like weight-control effort, weight stability represents a source of evidence from which to infer personal responsibility for weight: if a person can lose weight by making an effort to do so, their weight must be controllable to some degree. In this way, weight fluctuation may worsen evaluations of obese individuals by implying that prejudice is acceptable because their stigmatized status is temporary. For example, Weiner et al. (1988) investigated the effect of perceived stability of stigma in general, and observed that more stable stigmata (such as blindness or Alzheimer’s disease) tend to evoke more pity and desire to help, and fewer negative emotions than do those which are perceived as more onset-controllable (such as AIDS) and unstable (such as drug abuse). These findings were replicated by Menec and Perry (1998), and both studies found that obesity was perceived as
relatively onset-controllable and amenable to change, especially when there is no medical explanation.

Existing research on weight stability is scarce. Latner et al. (2012) were the first to investigate its influence on how people are perceived, in their recent study of stigma against previously-obese individuals, cited earlier in this chapter. They asked participants to evaluate lean target individuals whose weight had remained stable, or who were formerly obese but had lost weight by either bariatric surgery, or dieting and exercise. They also included obese individuals who were weight stable, or who had lost weight from a greater degree of obesity. As described already, they found that attractiveness ratings were lower for individuals who were currently or previously obese, regardless of method of weight loss. All the other studies regarding the differential effects of an individual's weight stability on obesity stigma have relied on the medical-explanation paradigm, where stability of obesity may be inferred from an underlying medical condition. Future studies that include direct information describing the stability of a target's weight could prove especially relevant to those who engage in on-off dieting and weight-cycling, often described as 'yoyo-dieting'. The prevalence of this pattern of repeated weight loss and regain is illustrated by the NIH (1998) finding that most weight lost in clinical trials is regained within 5 years. This finding was reiterated in Miller's (1999) review of the literature on the long-term effectiveness of diets. A later review by Mann et al. (2007) went even further, reporting that one- to two-thirds of dieters subsequently regained more weight than they lost while dieting. A number of findings demonstrate that larger initial weight losses tend to be followed by larger weight regains, rendering the process counterproductive (Wadden & Letizia, 1992;
Wadden, Sternberg, Letizia, Stunkard, & Foster, 1989; Wing, Blair, Marcus, Epstein, & Harvey, 1994). Furthermore, diets are often short lived: among female college students surveyed by Strong (1996, as cited in Huon & Strong, 1998), 79% reported dieting for less than three weeks. Repeated cycling of weight loss and gain appears to be highly prevalent among the overweight, as suggested by Ikeda et al.’s (2004) finding that an individual’s number of previous dieting attempts correlated positively with their BMI. They also found that 79% of their obese female subjects reported being unable to permanently maintain any weight loss. The possibility that an individual's unsuccessful struggle with their weight may worsen stigma is a topic that deserves empirical study.

Belief in a just world (BJW) may also determine how weight stability is interpreted. Results from a study by Miller (1977) suggest that among those who hold BJW, it is actually a stable, negative outcome that facilitates blame. Participants in Miller's study who scored higher on measures of BJW donated more money to those whose need was temporary, than to those whose need would continue. More research is needed to disentangle the relationship between BJW and perceived controllability and stability of weight, in prejudice toward obese people.

5.7 Conclusions

Overall, the present results accord with previous findings: obese individuals are stereotyped negatively, and in most cases this occurs – or is expressed – when they are perceived as personally responsible for their weight. The present research provides a unique demonstration of how obese individuals’ weight-control effort can mitigate stereotyping by reducing attributions of
responsibility for obesity. This is even true of the perception that obese
individuals are more susceptible to illness, for which responsibility for obesity is
less relevant than weight-control effort and obesity itself. Although personal
responsibility for obesity is not attributed blindly, individual weight-control effort
does not \textit{entirely} excuse obese individuals from perceived responsibility, nor does
it \textit{entirely} eliminate stereotyping. ‘Deserved’ or otherwise, obesity still exerts
significant negative influence over how individuals are perceived.
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Appendices

Appendix A: Vignettes

Obese, High-Effort

Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house.

Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.

Jenny is not at a healthy weight. She currently weighs 85 kilos (187 lb), and her doctor told her that this means she is very overweight – in fact, she is obese.

Jenny told her doctor that she works hard to control her weight – that she carefully avoids fattening foods, and limits the size of her meals, even if this means wasting food when she is served a large portion at a restaurant. She added that she always says no to chocolate and lollies, even though they are her favourite foods. She said that she feels compelled to burn off excess calories by visiting the gym or playing sport.

Obese, Low-Effort

Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house.

Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.
Jenny is not at a healthy weight. She currently weighs 85 kilos (187 lb), and her doctor told her that this means she is very overweight – in fact, she is obese.

Jenny told her doctor that she makes no effort to try to control her weight – that she frequently enjoys ‘fattening’ foods, and always finishes what’s on her plate, even if this means overeating when she is served a large portion at a restaurant. She added that she never says no to chocolate or lollies, which happen to be her favourite foods. She said that she does not attempt to burn off excess calories by visiting the gym or playing sport.

**Healthy-Weight, High-Effort**

Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house.

Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.

Jenny is at a healthy weight. She currently weighs 65 kilos (143 lb), and her doctor told her that this means she is in the normal, healthy weight range.

Jenny told her doctor that she works hard to control her weight – that she carefully avoids fattening foods, and limits the size of her meals, even if this means wasting food when she is served a large portion at a restaurant. She added that she always says no to chocolate and lollies, even though they are her favourite foods. She said that she feels compelled to burn off excess calories by visiting the gym or playing sport.
Healthy-Weight, Low-Effort

Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house.

Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.

Jenny is at a healthy weight. She currently weighs 65 kilos (143 lb), and her doctor told her that this means she is in the normal, healthy weight range.

Jenny told her doctor that she makes no effort to try to control her weight – that she frequently enjoys ‘fattening’ foods, and always finishes what’s on her plate, even if this means overeating when she is served a large portion at a restaurant. She added that she never says no to chocolate or lollies, which happen to be her favourite foods. She said that she does not attempt to burn off excess calories by visiting the gym or playing sport.
Appendix B: Modified Vignettes

**Obese, High-Effort**

Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house.

Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.

Jenny is not at a healthy weight. She currently weighs 85 kilos (187 lb), and her doctor told her that this means she is very overweight – in fact, she is obese.

Jenny works hard to control her weight – she carefully avoids fattening foods, and limits the size of her meals, even if this means wasting food when she is served a large portion at a restaurant. She always says no to chocolate and lollies, even though they are her favourite foods. She feels compelled to burn off excess calories by visiting the gym or playing sport.

**Obese, Low-Effort**

Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house.

Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.

Jenny is not at a healthy weight. She currently weighs 85 kilos (187 lb), and her doctor told her that this means she is very overweight – in fact, she is obese.
Jenny makes no effort to try to control her weight – she frequently enjoys ‘fattening’ foods, and always finishes what’s on her plate, even if this means overeating when she is served a large portion at a restaurant. She never says no to chocolate or lollies, which happen to be her favourite foods. She does not attempt to burn off excess calories by visiting the gym or playing sport.

**Healthy-Weight, High-Effort**

Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house.

Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.

Jenny is at a healthy weight. She currently weighs 65 kilos (143 lb), and her doctor told her that this means she is in the normal, healthy weight range.

Jenny works hard to control her weight – she carefully avoids fattening foods, and limits the size of her meals, even if this means wasting food when she is served a large portion at a restaurant. She always says no to chocolate and lollies, even though they are her favourite foods. She feels compelled to burn off excess calories by visiting the gym or playing sport.

**Healthy-Weight, Low-Effort**

Jenny is 25 years old and works full-time as a receptionist. She lives in a rented apartment, but is saving to buy a house.

Between work, housework, shopping and socialising, she often enjoys watching ‘thriller’ movies and updating her blog. She has several good friends, with whom she regularly goes out.
Jenny is at a healthy weight. She currently weighs 65 kilos (143 lb), and her doctor told her that this means she is in the normal, healthy weight range.

Jenny makes no effort to try to control her weight – she frequently enjoys ‘fattening’ foods, and always finishes what’s on her plate, even if this means overeating when she is served a large portion at a restaurant. She never says no to chocolate or lollies, which happen to be her favourite foods. She does not attempt to burn off excess calories by visiting the gym or playing sport.