# Displays of Adaptive Body Image by Others: Examining Their Influence on College Women's Body Image

by

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A thesis

presented to the University of Waterloo

in fulfilment of the

thesis requirement for the degree of

Doctor of Philosophy

in

Psychology

Waterloo, Ontario, Canada, 2021

**Examining Committee Membership**

The following served on the Examining Committee for this thesis. The decision of the Examining Committee is by majority vote.

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## Author's Declaration

This thesis consists of material all of which I authored or co-authored: see *Statement of Contributions* included in the thesis. This a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

## Statement of Contributions

Kathryn Miller was the sole author for the General Introduction, bridging sections and the General Discussion, which were written under the supervision of Dr. Allison Kelly and were not written for publication.

This thesis consists in part of two manuscripts written for publication. Exceptions to sole authorship of material are as follows:

**Research presented in Study 1:**

This research was conducted at the University of Waterloo under the supervision of Dr. Allison Kelly and was based on secondary data analyses of data that were collected as part of a larger study broadly examining the relationship between self-compassion and body image (Kelly & Stephen, 2016). Kathryn Miller contributed to formulation of the research questions and data analytic plan in consultation with Dr. Allison Kelly, who conducted data analyses. Elizabeth Stephen was responsible for data collection. Kathryn Miller wrote the draft manuscript to which all co-authors contributed intellectual input.

Citation: Miller, K.E., Kelly, A. C., & Stephen, E. (2019). Exposure to body focused and non-body focused others over a week: A preliminary investigation of their unique contributions to college women's eating and body image. *Body Image, 28,* 48-52. https://doi:10.1016/j.bodyim.2018.12.003

**Research presented in Studies 2 and 3:**

This research was conducted at the University of Waterloo under the supervision of Dr. Allison Kelly. Kathryn Miller designed both studies with consultation from Dr. Allison Kelly. Iulia Banica, contributed to the preparation of ethics materials. Kathryn Miller, Bethany Nightingale, Iulia Banica, Emily Shiu, Laura Obdeyn, Olivia Hartman, Madeline Crichton, and Benjamin

Southern, contributed to collecting the data. Kathryn Miller conducted data analyses and drafted the manuscript, to which Dr. Allison Kelly contributed intellectual input.

Citation: Miller K.M., Kelly A.C. (In preparation). Interpersonal displays of adaptive body image: What type is most beneficial to hear in the face of a body image threat?

As lead author of these three studies, I was responsible for conceptualizing study design, data analytic planning, and/or carrying out data analyses and drafting and submitting manuscripts. My co-authors provided guidance and/or input during each stage of the research and provided feedback on draft manuscripts.

**Abstract**

The negative impact of interacting with others who display maladaptive body image has been well documented. Only recently have researchers started to examine adaptive body image, thus the interpersonal impact of displays of adaptive body image is largely unknown. The overarching goal of the current dissertation is to examine how displays of adaptive body image in others might influence one's own body image. In Study 1, the goal was to naturalistically examine the unique effects of exposure to others who were body focused (i.e., who talked about dieting, were focused on exercising and working out, and who were preoccupied with their bodies) and non-body focused (i.e., who focused little on body image, and who ate intuitively) on college women's body image and eating. Ninety-six female university students tracked the frequency of their interactions with body focused and non-body focused others, and reported on their personal body image and eating, each day over the course of a week. Multilevel modeling revealed that higher average levels of exposure to non-body focused others over the week uniquely predicted greater intuitive eating, greater body appreciation and less dietary restraint, whereas higher average exposure to body focused others predicted these outcomes in the opposite direction. Daily levels of exposure to body focused others did not predict eating and body image, but daily exposure to non-body focused others did. On days when women reported more exposure to non-body focused others than their personal average level over the week, or than their previous day's level, eating and body image were better. In Study 2, the goal was to experimentally examine whether different types of adaptive coping reactions to a body image threat would impact an observer's body image when faced with personal body image distress. One hundred and fifty-eight female university students underwent a body image distress induction and were then randomly assigned to listen to a vignette in which a peer described reacting to a distressing body

image event using self-compassion, self-esteem enhancement, or distraction to reduce their distress. There was no effect of condition on any of the outcome variables. However, participants reported significantly higher body acceptance and body image focused self-compassion after hearing their assigned audio clip, regardless of what type of coping reaction they heard. The goal of Study 3 was to understand the active components of Study 2's coping vignettes that accounted for the beneficial body image outcomes the study's participants experienced across the experimental conditions. As the goals and methodology of Study 3 follow directly from the results of Study 2, Studies 2 and 3 are included in the same manuscript in this thesis and are intended to be published as a single manuscript. To isolate the components of these experimental conditions, three vignettes were used depicting someone a) experiencing body image distress with which she coped adaptively, as in Study 2's three conditions (Adaptive Body Coping condition), b) expressing body image distress but not displaying adaptive coping (Body Distressed condition), and c) denying experiencing body image distress and simply relating well to their body (Body Contented condition). Participants were 207 female university students and the same procedures were used as in Study 2. Those randomly assigned to the Adaptive Body Coping condition experienced significantly greater body image related self-compassion and body acceptance than those in the other two conditions; they also experienced significantly less body image distress than those in the Body Contented conditions, and less body image distress than those in the Body Distressed condition (trend level). Furthermore, those in the Body Distressed condition experienced greater body image related self-compassion than those in the Body Contented condition. These findings are among the first to suggest that witnessing others display adaptive body image can have a beneficial impact on one's body image, both in one's daily life and in moments of acute body image distress. Furthermore, the impact of witnessing certain

types of adaptive body image displays may be more or less helpful for one's body image depending on the context. Within this dissertation, we will also examine the implications of these findings from both a theoretical and clinical perspective.

**Acknowledgements**

There are a number of people without whom this thesis would not have been completed, and who have my extreme gratitude and appreciation. First of all, to my supervisor Dr. Allison Kelly, your unwavering support, patience and compassion have been fundamental to this work. Knowing that you would give any question I was struggling with the full force of your attention and insight was a comfort throughout this process and you continue to model the type of flexible, supportive, and warm supervision style I someday hope to successfully emulate. To my thesis committee, Dr.'s Uzma Rehman and David Moscovitch you have been there since my Master's work and I am so grateful for the insight and support you have continued to provide through my doctoral work. To my clinical cohort, I still thank whatever twist of fate put us at UW in the same program in the same year. You guys truly made grad school some of the best years of my life, despite living away from all my friends and family, never mind the endless stats advice, reassurance, and instrumental support you provided in the crafting of this thesis (who knew you had to have an internal-external supervisor? Thanks Beth!). A big thank you to my labmates and lab-coordinators for all the help in developing and executing my methodology, I am sure you got sick of hearing my voice during the development and refinement of those darn vignettes!

I am sure there is a moment every doctoral student faces in the writing of their dissertation where they teeter precariously on the brink of sanity. Thank you to my partner Fil for saving me from mine, which surprisingly, proved to be formatting tables in Word. I am so grateful you had my back during this and any other obstacles that arose. It's been a long road but thank you for walking it with me. To my undergrad/high school friends (Emma, Mira, Hannah) thank you for your positivity and outlandish boosting of my self-esteem, (although I know self-esteem is contingent) it still helped more than you know. Finally I want to thank my parents, Dawn and

David, and my siblings Rachel and Matt. It's been a long road, and you have literally been there since day one. I think the biggest reason I am completing this degree, and specifically this research, is a deep curiosity and drive to understand people and their relationships. This drive is something you have instilled in me by surrounding me with a family, both nuclear and extended, who cares about each other deeply and shapes each other through that bond. Observing and being part of those dynamics made me realize how fundamental these relationships and interactions are to our sense of self, and....well....here we are today. Thank you everyone, more than I can say.

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## General Introduction

Imagine someone who is chronically dissatisfied with their body. Now imagine they have been marooned on a desert island alone for the rest of their life. Would they still remain concerned about losing those last ten pounds?

This is an interesting question to consider, and highlights the inherently interpersonal nature of body image. Body image is a multifaceted construct that comprises cognitions, feelings, beliefs, and behaviours related to one's own body (Cash & Smolak, 2011; Thompson, Heinberg, et al., 1999). Although body image has long been considered an intrapersonal construct, research has firmly established that beauty ideals are transmitted socio-culturally (Cafri et al., 2005), and that the maladaptive body image attitudes and behaviours associated with pursuing these ideals are also socially transmissible (Keery et al., 2004; Tiggeman, 2012). Only recently have psychologists started to consider more positive ways of relating to the body and how these may serve to protect against the negative impact of pursuing culturally endorsed standards of weight and shape. In the current dissertation, I extend these endeavours by examining whether and how positive body image attitudes and behaviours may also be socially transmissible. First, I review the theoretical, empirical, and clinical literatures that inspired my research studies. Two manuscripts then present findings from 1) an observational daily diary study that examined how exposure to adaptive and maladaptive body image in others uniquely contributed to college women's body image from day to day and over a week, and 2) two experimental studies that examined the impact of exposure to a peer's adaptive body image attitudes on college women's experiences of coping with body image distress. I conclude by discussing the empirical and theoretical contributions of this research as well as by proposing clinical applications and areas for future research.

**Negative, Maladaptive Body Image**

There are various cognitive, affective, and behavioural constituents that comprise negative, or maladaptive, body image[1] (Cash & Smolak, 2011). The cognitive component entails evaluating one's body negatively or critically, for example, "I look bad" or "My body is gross." Such negative evaluations can involve various cognitive processes, including unfavourable appearance comparisons, body image preoccupation, and body image investment (Mitchison et al., 2017). Unfavourable appearance comparisons include comparing one's body to a societal standard of the ideal weight and shape for one's gender and deeming oneself to be inferior, as well as comparing oneself to a peer and considering them to be more attractive (Meyers & Crowther, 2009). Body image preoccupation is characterized by the tendency to place undue mental emphasis on one's body weight and shape, for example, thinking about one's weight or shape often and wondering or worrying about gaining weight. Body image investment entails placing high levels of importance on one's physical appearance as a source of self-worth and value (Mitchison et al., 2017). It can involve beliefs that being thin or muscular is important for happiness, to be successful, to be accepted, and so on. High body image investment may stem from beliefs related to one's self-worth being contingent on meeting personal and/or societal standards of beauty; for example, "If I am not thin enough, then I am a failure, I am weak, and I will be rejected by others" (Cash, 2002). Taken together, these various negative cognitive processes surrounding one's body and appearance trigger negative emotional states including

[1] Negative body image has been referred to in various ways within the research literature including "body image distress", "body image dysfunction", "body image disturbance", "maladaptive body image" and "body dissatisfaction." Thus, these terms will be used interchangeably in the current dissertation to denote the cognitive, affective and behavioural body image processes that result in decreased physical and psychosocial well-being.

guilt, shame, self-loathing, self-consciousness and other forms of negative affect such as anger and sadness (Cash, 2002; Leahey et al., 2011).

***Correlates and Outcomes of Negative Body Image***

Negative cognitive processes related to one's body and appearance, and the negative emotions these processes trigger, elicits what Cash and colleagues refer to as adjustive, self-regulatory activities (Cash et al., 2004). These are behaviours aimed at coping with and reducing body image distress. Unfortunately, adjustive self-regulatory activities typically provide short-term relief from body image distress, but ultimately maintain and reinforce negative body image beliefs, evaluations and feelings. Such coping behaviours include the avoidance of situations that make body image salient, such as looking in the mirror or shopping for clothes, and attempts to correct or compensate for perceived flaws, for example by dieting, exercising for weight loss, or wearing a lot of makeup (Cash et al., 2005). Encompassed in these self-regulatory activities are behaviours such as body checking, which is defined as repeated checking of aspects of one's body in a range of ways (Fairburn et al., 1999). This type of checking behaviour can include, but is not limited to weighing oneself, measuring parts of one's body, engaging in social comparison related to weight and shape, or trying on specific clothing items for the purpose of checking one's weight and shape. Body checking may stem from maladaptive body image-related cognitive-affective processes such as body dissatisfaction, body image investment and body preoccupation; however, it also serves to maintain these processes by magnifying perceived body flaws and increasing focus on one's appearance (Shafran et al., 2007; Smeets et al., 2011). Therefore, adjustive, self-regulatory activities form part of a vicious cycle that further increases body image distress and maladaptive body image preoccupation (Fairburn et al., 1999). Indeed, the maladaptive body image cycle outlined above is also associated with a number of undesirable

long-term psychological and behavioural outcomes, such as higher negative affect, increased depression, anxiety, and low self-esteem (Cash & Fleming, 2002; Kostanski & Gullone, 1998).

In addition to the aforementioned self-regulatory behaviours that stem from acute body image distress, negative body image is associated with more extreme and often life-threatening behaviours including various forms of disordered eating. The latter can include chronically restricting calorie intake below one's physiological needs, fasting, binge eating (i.e., compulsively eating large amounts of food at one time and feeling unable to control one's eating), and purging behaviours such as vomiting and using laxatives and/or diuretics to compensate for eating (Thompson, Heinberg, et al.,1999). Body image distress thus increases the risk of developing a clinical eating disorder (Stice et al., 2011; Stice & Shaw, 2002) wherein these eating disturbances become frequent and severe enough to cause significant harm to mental and physical health. Indeed, eating disorders are associated with increased risk of heart failure, osteoporosis, hypokalemia (a potentially fatal electrolyte imbalance), amenorrhea, and diabetes, and also compromise cognitive functioning and quality of life (Mitchell & Crow, 2006). Other serious and functionally impairing sequelae of body image distress include compulsive exercise and increased steroid use in men (Darby et al., 2007; Homan, 2010; Stice, 2002; Pope et al., 2017). Negative body image in women has also been linked to higher engagement in risky sexual behaviours such as intoxication during sexual activity and unprotected sex (Gillen et al., 2006; Littleton et al., 2005), as well as lower sexual desire and decreased sexual satisfaction (Calegero & Thompson, 2009a; Sanchez & Kiefer, 2007; Woertman & van den Brink, 2012). Body dissatisfaction has also been linked to other maladaptive health behaviours including increased smoking and substance use, increased use of tanning beds, poor disease management and decreased engagement in preventative health behaviours such as cancer screening (French et al.,

1994; Ridolfi & Crowther, 2013). Body image disturbance is widespread and notoriously difficult to address, as studies show that 45-65% of women report being dissatisfied with their bodies and weight (Cash & Henry, 1995; Fiske et al., 2014), and the mortality rates associated with eating disorders are higher than all other mental disorders (Arcelus et al., 2011). Notably, body dissatisfaction has been termed a "normative discontent", reflecting the fact that relating to one's body in a maladaptive way is both common and accepted within Westernized society today (Rodin et al., 1985). Evidently, body image distress is a pervasive problem that can have serious and long-lasting psychological, physical, and functional ramifications.

***Negative Body Image Across Demographics***

Research shows that certain populations are more susceptible to suffer from negative body image. In terms of how it varies across demographic groups, negative body image (operationalized as body dissatisfaction) has consistently been found to be higher in women than men (Esnaola et al., 2010), with more than 50% of women reporting body image dissatisfaction, and approximately 30% of men (Al Sabbah et al., 2009). However, recent studies suggest that body image dissatisfaction may be increasing among men (Heinberg & Kraft 2008) and may present in more varied ways including a drive for muscularity and desire to gain weight/muscle mass in addition to the desire to lose weight (Cohane & Pope, 2001; Jones & Crawford, 2005; Smolak & Stein, 2006). Research suggests that this may be in part due to increasing sociocultural pressure placed on men to adhere to masculine appearance ideals of a muscular lean body (Gillet & White, 1992; Leit et al., 2001; Mishkind et al., 1986). Studies also show differences in body dissatisfaction related to sexual orientation such that gay men report significantly higher levels of body dissatisfaction than heterosexual men (Drummond, 2005; Carper et al., 2010; Silberstein et al.,1989; Yelland & Tiggemann, 2003). There is conflicting research regarding body image

dissatisfaction in lesbians, with some studies showing slightly higher body satisfaction, and some showing no significant differences compared to heterosexual women (Peplau et al., 2007).

The small amount of research examining body image in gender minority individuals suggests that transgender individuals experience higher levels of body dissatisfaction compared to cis gender individuals (Algars et al., 2010; Vocks et al., 2009), however body image tends to depend on a number of variables including what stage of gender confirmation an individual is at and genotypic sex (Bandini et al., 2013). Furthermore, body dissatisfaction appears to improve with use of hormone therapy (Lindgren & Pauly, 1975).

Studies of body dissatisfaction across ethnicities have yielded somewhat mixed results, with some studies suggesting that Black women and Asian women are less dissatisfied with their bodies than white women and Hispanic women (Altabe, 1998; Cash & Henry 1995; Rucker & Cash, 1992). However, other research has found no significant differences across ethnicities, particularly when socioeconomic status is controlled for, which authors suggest points to the influence of class on body image rather than race, with higher socioeconomic status associated with increased body dissatisfaction (Caldwell et al., 1997; Demarest & Allen, 2000). Ethnic differences in body image for men have been found to be largely nonexistent (Barr, 1995; Cachelin et al., 1998; Mintz & Kashubeck, 1999).

**Positive, Adaptive Body Image**

Given the intractable nature, prevalence, and sometimes life-threatening consequences of negative body image, there has understandably been a large focus within the field of body image research on understanding the factors that cause and maintain it. However, as noted by Tylka (2011), such a circumscribed focus may lead to practical applications and interventions that reduce body dissatisfaction and yield neutral body image, rather than leading to ones that

actively promote positive and adaptive body image. Only recently has the field acknowledged that adaptive body image is not merely the absence of body image dysfunction, and that there is a need to explore factors that not only protect against negative body image but also foster constructive ways of relating to one's body (Smolak & Cash, 2011). This "positive body image" movement has gained traction in recent years.

The term "positive body image" can refer to evaluating one's physical appearance positively – that is, liking the way one's body looks (Webb et al., 2015). However, the construct of positive body image is comprised of multiple other factors, some of which are relatively independent from how much one likes one's appearance. Indeed, according to the literature, positive body image is a multifaceted construct that consists of intersecting internal experiences (e.g., inner body acceptance and appreciation) with external experiences (e.g., interpersonal context, media, culture) (Tylka & Wood-Barcalow, 2015). As research on positive body image is relatively new, scholars within the field acknowledge that there are likely additional facets of the construct that have yet to be identified and quantitatively studied (Tylka & Wood-Barcalow, 2015). Nonetheless, the following components have emerged across studies as common factors that make up positive body image

1) Body acceptance and body appreciation. Body acceptance is the ability to accept one's body even if one is not completely satisfied with all aspects of it. Body appreciation is the ability to appreciate and respect one's body for its unique physical features as well as the functions it performs for example, being able to hold one's child, or expressing joy through dance (Avalos et al., 2005; Holmqvist & Frisén, 2012; McHugh et al., 2014; Pope et al., 2014; Tylka & Wood-Barcalow, 2015; Wood-Barcalow, et al., 2010).

2) Broadly conceptualizing beauty. Broadly conceptualizing beauty is the belief that a wide variety of characteristics can contribute to beauty, including external physical attributes as well as internal traits such as confidence, humour or kindness (Holmqvist & Frisén, 2012; Parker et al., 1995; Wood-Barcalow, 2010).

3) Filtering information in a body-protective manner**.** This body-protective mental filter is the propensity to interpret information in a manner that protects one's body image from negative and dysfunctional societal messages, for example, recognizing that the bodies presented in magazines and on television are an unrealistic and unachievable standard for most women to live up to; (Frisén & Holmqvist, 2010; Holmqvist & Frisén, 2012; McHugh et al., 2014; Tylka & Wood-Barcalow, 2015; Wood-Barcalow et al., 2010)

4) Body image flexibility**.** Body image flexibility is the ability to accept and tolerate perceived body flaws or feelings of insecurity about one's body without letting these thoughts and feelings interfere with engaging in personally meaningful pursuits and activities (i.e., going to the beach because one loves to swim despite feeling self-conscious in a bathing suit); (Sandoz, et al., 2013; Webb, 2015)

5) Inner positivity**.** Inner positivity represents the affective and behavioural manifestations of respecting and appreciating one's body for instance confidence, eating according to internal signals and cravings rather than dieting, exercising for health rather than to control weight or shape, and giving one's body the appropriate rest and care it needs (Avalos et al., 2005; Tylka, 2011; Wood-Barcalow et al., 2010).

As evident from these various components of positive body image, positive body image is not contingent on liking one's physical appearance or feeling pleased with one's weight and/or shape. Rather, it is the ability to respect and appreciate one's body, and treat it accordingly,

regardless of whether it matches societal standards of thinness and beauty. The most common operationalization of positive body image is reflected in the Body Appreciation Scale (Avalos et al., 2005; Tylka & Wood-Barcalow, 2015). The Body Appreciation Scale was developed and refined based on a broad definition of body appreciation that encompasses many of the aspects of positive body image including: a) a favourable opinion of one's body regardless of physical appearance, b) acceptance of the body in spite of perceived physical flaws or imperfections, c) respect for the body that includes attending to its needs and engaging in healthy behaviours, and d) protection of the body by rejecting unrealistic body image ideals portrayed in the media.

***Correlates and Outcomes of Adaptive Body Image***

Williams and colleagues (2004) used cluster analysis to compare women's scores on body dissatisfaction, body image emotional experiences, and quality of life tied to body image. Results revealed three distinct clusters of outcomes that authors categorized into "positive body image," "normative body image discontent," and negative body image. Unlike those with negative body image or normative body image discontent, women with positive body image reported a distinct pattern of relatively low body dissatisfaction, a lack of emotional distress related to body image, and endorsement that body image contributed positively to their overall quality of life. Further studies have found similar results that suggest positive body image contributes to various other body image constructs (i.e., eating behaviour, body image coping, body satisfaction) over and above the influence of negative body image. Studies that partial out body appreciation's shared variance with body dissatisfaction demonstrate that greater body appreciation is uniquely associated with greater intuitive eating (the ability to eat according to one's hunger and fullness signals and cravings rather than in an effort to control weight (Avalos & Tylka, 2006; Tribole & Resch, 1995; Tylka, 2006; Tylka & Kroon Van Diest, 2013) and less

eating disorder symptomology, as well as greater appearance satisfaction, less appearance investment, less appearance fixing (attempts to fix one's appearance to minimize perceived flaws, such as dieting or exercising to lose weight, wearing makeup to hide perceived defects, wearing clothes that hide one's body), and greater use of adaptive coping (Avalos et al., 2005; Gillen, 2015; Tiggeman & McCourt, 2013; Tylka & Wood-Barcalow, 2015; Williams et al., 2004).

In addition to having more adaptive body image and eating, additional studies show that women with positive body image (operationalized as body appreciation) also tend to have lower depressive symptoms, higher optimism, self-esteem, and psychological wellbeing above and beyond what could be explained by variance in negative body image (Avalos et al., 2005; Gillen 2015; Swami, Hadji-Michael, et al., 2008; Williams et al., 2004). Positive body image also appears to contribute uniquely to other more general behaviours that are adaptive, such as increased use of sun protection, engagement in screening for skin cancer, better oral hygiene practices, and better sexual functioning and satisfaction (Andrew et al., 2016a; 2016b; Dumitrescu et al., 2008; Robbin & Reissing, 2018). Finally, a study by Tiggeman and McCourt (2013) assessed the correlation between positive body image (operationalized as body appreciation), body dissatisfaction, and age, cross-sectionally in women across the lifespan (age 18-75). They found that the negative association between positive body image and body dissatisfaction decreased with age. In other words, for late adolescent and young adult women, the higher the level of body dissatisfaction the lower the level of positive body image; however, older adult women demonstrated an increased ability to appreciate and respect their bodies even while being dissatisfied with their body's appearance or weight. Thus, it appears that controlling for negative body image, positive body image is uniquely associated with numerous indicators of

adaptive functioning that are specific to body image and also more general. Furthermore, it is indeed possible to experience some level of body dissatisfaction while still appreciating one's body and engaging in constructive eating and body related behaviours.

### *Adaptive Body Image Across Demographics*

With regards to demographic differences in positive body image, men tend to have higher body appreciation than women (Kroon Van Diest & Tylka, 2010; He et al., 2020; Swami, Stieger, et al., 2008; Tylka, 2013). Also paralleling the research on body dissatisfaction, heterosexual men have higher body appreciation than gay men (Alleva et al., 2018). Although replication is needed, research on ethnic differences in positive body image show differing patterns of body appreciation across ethnicities compared to negative body image. Swami and colleagues (2009) found that Hispanic women had the highest levels of body appreciation followed by black women, white women and south Asian women.

## Interpersonal Influences on Body Image

Attempts to understand how body image develops and subsequently becomes adaptive or maladaptive are ongoing. Due to the complex nature of the construct, one thing that the field agrees on is that there are likely many factors that contribute to an individual's body image including biological/genetic, developmental, cultural, personality and spiritual factors (Wood-Barcalow et al., 2010). The unique contribution each of these factors makes is likely to vary in significance across individuals. One factor that has consistently emerged as relevant in predicting body image is one's social environment.

### *Social Development of Maladaptive Body Image*

The research examining interpersonal influences on maladaptive body image presents compelling evidence that spans qualitative, correlational and experimental studies demonstrating

the significant and often detrimental impact that social environment can have on people's body image. The Tripartite Influence Model of Body Image (Thompson, Coovert, et al., 1999; Thompson, Heinberg, et al., 1999) posits that interpersonal factors influence an individual's level of body dissatisfaction which in turn predicts disordered eating behaviours. Evidence in support of this model has emerged across various populations, and the model remains one of the seminal theories for understanding the development of maladaptive body image. The model identifies three primary interpersonal factors that influence body image: peers, parents and media. Media factors are thought to exert influence by communicating information related to appearance norms and the thin ideal. A plethora of research has suggested that exposure to appearance media is detrimental to the body image of the individual viewing it, as it promotes increased social comparison and thin ideal internalization (Grabe et al., 2008; Groesz et al., 2002; Mills, Shannon, & Hogue, 2017; Keery et al., 2004). However, the ways in which peers and parents can exert influence over an individual's body image is more multifactorial and can be delineated into a number of additional sub-components. For example, peer and parental factors are thought to exert influence on body dissatisfaction in three ways i) feedback, such as teasing or criticism about weight, ii) modeling of dieting and body image concerns, and iii) investment in the thin ideal.

Indeed, research has shown that direct feedback, teasing, and criticism from others regarding one's body is understandably associated with greater body dissatisfaction, dysfunctional eating and weight loss efforts, and greater pressure to conform to thin ideals (Herbozo et al., 2013; Menzel et al., 2010; Meyers & Rosen, 1999; Mills & Miller, 2007). Interestingly, positive appearance feedback seems to have mixed effects on body image outcomes. Correlational research suggests that receiving more frequent positive appearance

feedback is associated with less body dissatisfaction and better appearance evaluation (Herbozo & Thompson, 2006a; 2006b). However, research also suggests that receiving positive appearance feedback is related to negative body image outcomes such as increased body surveillance and subsequently greater body dissatisfaction and body shame (Calegero et al., 2009; Tiggeman & Boundy, 2008). Authors hypothesized that, despite the positive valence of appearance feedback, receiving appearance compliments may increase investment in appearance as a source of self-worth and serve as evidence that one's appearance is being noticed and evaluated. This may then lead the complimentee to more closely monitor their own body weight/shape, thus magnifying perceived flaws and negative body-related thoughts and feelings.

Although certain forms of direct feedback, such as criticism about one's appearance may be detrimental, research suggests that such direct feedback is relatively less common than more subtle forms of social influence, (Wertheim et al., 1997). More indirect forms of interpersonal influence often take the form of modeling. That is, individuals are influenced by the body image attitudes and behaviours displayed by those around them; these can include dieting, fat talking (i.e., talking negatively about one's own weight or shape) (Nichter & Vuckovic, 1994), exercising for weight loss, as well as more general reinforcement of cultural appearance norms such as expressing sentiments that align with the thin ideal, for example, "Oh wow, my cousin lost 10 lbs and looks so amazing. I wish I had that kind of willpower!". Given how prevalent these types of behaviours and conversations are within western society (Becker et al., 2013; Martz et al., 2009; Shannon & Mills, 2015), it is important to understand how body image attitudes and behaviours are transmissible across individuals.

### *Social Development of Adaptive Body Image*

Unsurprisingly, given the relative newness of the positive body image construct, there are far more studies examining how interpersonal factors can negatively impact body image as compared to studies that examine whether and how interpersonal factors can positively influence body image. However, a seminal study by Avalos and Tylka (2006) established a theoretical model that highlights interpersonal influences as a pivotal factor in the development of adaptive body image. The acceptance model of positive body image and intuitive eating (Avalos & Tylka, 2006) presents a model whereby greater perceived body acceptance by others encourages greater body appreciation and a functional body image orientation which refers to focusing on what one's body can do rather than on how it looks. This functional orientation to body image also directly contributes to higher body appreciation and greater intuitive eating. As such, it appears that when an individual feels that their body is unconditionally accepted by others, this felt acceptance orients them to focus on the aspects of their body that they appreciate as well as how it functions to support their activities in daily life, and this allows them to eat in a way that is attuned to their cravings and bodily sensations, including hunger and satiety. This acceptance model of positive body image has been shown to account for approximately 60% of the variance in body appreciation (Avalos & Tylka, 2006; Augustus-Horvath & Tylka, 2011). Empirical evidence in support of this acceptance model of body appreciation and intuitive eating has emerged across a number of populations (Andrew et al., 2016c; Augustus-Horvath & Tylka, 2011; Oh et al., 2012) and is currently the only theoretical model that has explicitly found that certain interpersonal factors can have a positive influence on body image.

### *Theoretical Framework to Understand Social Transmission of Body Image*

There appears to be compelling evidence from experimental, observational and qualitative accounts that negative body image may be transmitted across persons. Longstanding research in social psychology offers a possible explanation for how this may occur. Classical operant conditioning suggests that the acquisition and subsequent enactment of new behaviours occur through associative learning processes, such that the propensity to display certain behaviours is modified through the use of punishment and reinforcement (Skinner, 1965, 2019). Bandura (1971, 1977) expanded upon this idea to suggest that human behaviour is learned through processes of social reinforcement or punishment. He posited that when presented with a given situation, an individual responds in a certain way, and the likelihood of responding similarly in a future situation is predicated on whether the behaviour is punished or reinforced by the individual's environment. Bandura also suggested that rather than using trial and error to directly test every possible response in a given situation, learning can occur by observing this process of punishment/reinforcement take place in those around us. This phenomenon has been termed observational learning or vicarious reinforcement. Research suggests that many important social constructs are propagated through observational learning such as language, morals, religion, education and other cultural constituents (Cowan et al., 1969; Rosenthal & Whitebrook, 1970; Rosenthal et al., 1970). Importantly, it appears that this vicarious learning can occur even without the learner being consciously attuned to the link between a behaviour and reinforcement (Hefferline et al., 1959; Hefferline & Keenan, 1963; Kennedy, 1970, 1971; Sasmor, 1966). In terms of vicarious learning of body image attitudes and behaviours, one may observe a family member or peer engage in weight loss behaviours and receive reinforcement in the form of admiration or praise for their efforts from others. Observing this type of reinforcement may

motivate beliefs and cognitions that encourage the learner to engage in weight control behaviours themselves in order to receive the same social rewards, whether or not s/he is aware that this is what s/he is trying to achieve.

Social learning theory additionally suggests that self-reinforcement processes may explain how values, attitudes, beliefs and self-concepts that are transmitted via observational learning can come to persist over long periods of time in the absence of observed or direct reinforcement. Self-reinforcement processes occur when people's cognitive-affective responses to their own behaviour acts as punishment or reinforcement for that behaviour (Bandura, 1971; 1977). For instance, if someone gains weight or breaks a dietary rule, they may react with disgust, shame, self-criticism and disappointment, even in the absence of immediate negative consequences from others. Relatedly, if they eat a salad, go to the gym, or lose weight, they may feel pride, satisfaction, and happiness regardless of whether others notice or comment on their behaviours. These types of self-reinforcement processes can develop via initial external reinforcement or punishment, for example, someone's mother reacting with disappointment or criticism if her daughter eats a cookie, but with praise if she loses weight. However, these processes can also occur by observing and adopting the self-reinforcement processes that others use to try and achieve desired outcomes (Bandura & Kupers, 1964; Bandura & Whalen, 1966; Marston (1965).

Studies have also shown the importance of cognitive modeling, which is the verbalization of one's thought processes and actions, in instigating behavioural and attitudinal change related to problem solving and coping with anxiety (Michenbaum, 1971; Sarason, 1975; Schunk, 1995; Schunk & Zimmerman, 1997). Thus, observing others verbalize their body image related self-reinforcement processes may provide a "road map" for an observer to adopt the same attitudes

and behaviours, increasing the observers sense of self-efficacy in achieving the same outcome (Schunk, 1987, 1995; Schunk et al., 1987). For example, one might hear someone say, "Oh man, I've gained weight, I'm so disgusting. I'm going to cut out carbs for the next month! Whenever I do that, I drop ten pounds easily and feel so much better!" The observer might then adopt the model's use of self-disgust as a negative consequence to motivate behavioural change in anticipation of the reinforcing outcome of weight loss and self-confidence. Self-reinforcement and cognitive modeling processes may help to explain how body image-related attitudes and behaviours may be subject to social learning.

Indeed, it appears that social learning theory may help explain how those around them may influence a given person's body image. Peers and family members may serve as immediate reinforcers of the wider socio-cultural appearance ideals that currently emphasize the importance of looking thin and/or more "fit" to be accepted (Krcmar et al., 2008). Exposure to others who model investment in these appearance ideals may lead an individual to internalize the ideals for themselves. This internalization can subsequently give rise to self-reinforcement processes that manifest as body dissatisfaction and other dysfunctional body image attitudes and behaviours when one perceives one's body to be discrepant from the ideal body, even in the absence of immediate socially reinforcing or punishing consequences.

**Empirical Support for the Influence of Social Learning Processes in Body Image.** Although there is a dearth of empirical data directly testing social learning processes in regards to body image, there is empirical evidence that supports the idea that body image is subject to observational learning through social exposure. Stice (1998) found that the frequency with which young women received social reinforcement (i.e., messages from others regarding the importance of being thin) by parents and peers as well as the extent to which parents and peers

modeled weight control behaviours, bulimic symptoms and body/weight preoccupation correlated significantly with current bulimic symptoms and prospectively predicted onset of bulimic symptoms two years later in an initially symptom-free population. Notably, exposure to media modeling and reinforcement did not predict onset of bulimic symptoms. These findings are in line with the work by Krcmar et al. (2008) that explored how body image is shaped by interpersonal norms modelled by parents and peers, such as valuing thinness, engaging in weight control behaviours themselves, and making comments about participants' weight. They found that interpersonal norms fully mediated the relationship between appearance media exposure and body and weight esteem. This is notable given that much research has been devoted to examining the direct influence of media exposure on body image, as it suggests that appearance media may exert its influence on an individual's body image via "live" reinforcement of appearance ideals by those in his or her environment.

One may then wonder exactly how these thin ideals become reinforced. What are the reinforcing or punishing consequences that operate to keep people invested in changing their bodies to fit this often-unattainable ideal? Qualitative research by Wertheim et al. (1997) gives some indication, with young women citing the need to "keep up" with their peers in terms of their appearance. Indeed, the desire to be socially accepted, as well as fears of being socially rejected, appears to play a notable part in the self-reinforcement processes people develop with regards to weight and shape. Strahan et al. (2007) sought to explore the types of appearance related schemas that might mediate the relationship between exposure to media images and body dissatisfaction. Using an implicit association task paradigm, they found that that when exposed to stimuli that reinforce the cultural thin ideal, women associate being heavy or big with social

rejection. They also found that the stronger the association between being heavy and social rejection, the more women tried to restrict their eating when that schema was activated.

Studies by the same researchers also examined how eating behaviour changed when presented with information that provides an interpersonal challenge to thin ideal schemas. In one study, women viewed thin images and then either received information that the majority of their peers believed the images were unrealistically thin (i.e., a direct challenge to the thin ideal) or received no information at all. Those who were told that their peers did not buy into the thin ideal showed less restrained eating than those who were not given this information. Evidently when women in the study were presented with information suggesting that, at least in their immediate peer environment, they did not need to be thin to be accepted, they did not feel the need to strive for the thin ideal by controlling their eating (Strahan et al., 2007).

In line with these findings is an experimental study by Bair et al. (2014), wherein female college participants were either given information that their peers preferred relatively thin or heavy body ideals, or were given no information about peer body ideal preferences. Participants were then asked to indicate their own personal ideal body size. Results showed that those who were given information that their peers preferred a thinner body ideal were more likely to choose a thinner personal body ideal than those who were given information that their peers preferred a larger body ideal. Notably, the personal body ideals reported by the participants in the peer thin ideal condition did not differ from those who were given no information about peer ideals. This supports the idea that social exposure to norms that challenge the thin ideal may effectively shift personal body image ideals away from the current thin ideal, the latter of which appears to be the default ideal held by college age women.

These studies are notable in a number of ways. First, they support the findings that suggest that while media may be an overarching transmitter of sociocultural beauty ideals, those ideals may be either reinforced or superseded by immediate interpersonal factors (Dunkley, Wertheim, & Paxton, 2001; Krcmar et al., 2008; McCabe & Ricciardelli, 2005; Van Vonderen & Kinnally, 2012). This makes sense given that media messages only hold power insofar as they communicate a general social standard (i.e., thinness is good) and signify interpersonal consequences (i.e., social rejection or acceptance) if they are not met. Thus, it is understandable that an individual would respond preferentially to the cues of their immediate environment, as it is this social context in which they would actually experience positive or negative consequences.

In terms of how modeling may either reinforce or challenge thin ideal schemas, and how that may subsequently influence an observer's body image, the answer may lie in the idea that actions communicate powerful information about one's values – namely, what the person communicating considers to be good or bad, worthy or unworthy. Mentalization is the human ability to reflect on one's own or other's mental states in making sense of interpersonal behaviour (Liotti & Gilbert, 2011). These mental states include thoughts, feelings, motivations and values. When someone in one's environment models behaviour that suggests they buy into the thin ideal (i.e., by dieting, fat talking, expressing admiration for thinness or goals related to losing weight), an observer would be able to use mentalization to infer that this person values thinness as a positive trait, and conclude that they would be more likely to be rejected by this person if they were living in a larger body, and be admired and accepted by them if they were thin. This may then facilitate self-reinforcement processes in the observer that motivate striving for the thin ideal in order to avoid rejection and/or gain the reward of social acceptance or admiration. Conversely, if others in one's environment were acting in ways that were counter to

the thin ideal – for example, eating intuitively, demonstrating little preoccupation with their weight, or talking in an appreciative and accepting way about their body – the observer may infer that these others do not base a person's worth on body weight and shape. The observer will thus not use body shape or weight as grounds for acceptance or devaluation of themselves or others, preventing the activation of thin ideal oriented self-reinforcement processes. Furthermore, the process of vicarious reinforcement, as outlined in by Bandura (1971;1977), suggests that an observer may also witness the positive consequences of being less body preoccupied, such as the ability to eat less restrictively, feeling content or confident in one's body, moving one's body in ways that bring joy rather than exercising to burn calories or avoid weight gain; these observed positive consequences may then act as vicarious reinforcement for the observer to adopt a similar body image orientation.

The research outlined above suggests that observing how others relate to their own bodies may allow one to predict how accepting or judgemental those people will be towards one's own body, and that this inference may motivate one to adopt similar body image attitudes in an effort to avoid social rejection and/or to gain rewards observed to be associated with that body image orientation. The following quote from a qualitative study by Wertheim et al. (1997) that examined adolescent girls' reasons for watching their weight illustrates exactly this possibility: "My friend is really skinny and she is always going on about how fat she is…and I am a bit bigger than her and I think that if she thinks she is fat then maybe she thinks I am fat too…maybe other people will think I am fat." (p. 348.)

### *Empirical Research on the Social Transmission of Negative Body Image via Modeling*

Although the mechanisms proposed by social learning theory have not been rigorously tested, a number of empirical studies support the idea that others' behaviours and attitudes influence one's own body image as the theory would predict.

**Correlational Research.** Studies consistently show a relationship between mothers' and daughters' levels of body dissatisfaction and eating attitudes, (Cooley et al., 2008; Kichler & Crowther, 2001; Pike & Rodin, 1991; van den Berg et al., 2010). This relationship may be partially explained by the fact that mothers who themselves are more preoccupied with weight and dieting are more likely to give their daughter direct negative feedback regarding their weight or explicitly encourage them to diet. However, there is also research to suggest that simply observing her mother's eating pathology and body dissatisfaction can contribute to a daughter's own dysfunctional body image and eating pathology independent of how much direct feedback the daughter receives from her mother about her weight. Kichler and Crowther (2001) found that maternal modeling, as measured by the mother's self-reported past and present dieting, eating attitudes and body dissatisfaction, was a significant predictor of daughter body dissatisfaction, even when accounting for the mother's negative weight-related feedback to the daughter. Cooley et al. (2008) found a similar pattern of results when using daughters' perceptions of their mothers' weight concerns as a predictor of daughter body dissatisfaction and eating pathology. Taken together, this research suggests that daughters who witness their mother express maladaptive body image attitudes and behaviours have more negative body image regardless of whether their mother also provided them with direct negative feedback about their weight or appearance, supporting the influence of maternal modeling in the formation of daughters' negative body image.

Although there is little research on body image attitudes and behaviours within romantic couples, one study suggests that body image may be transmissible from one partner to another (Oh & Damhorst, 2009). The researchers found that in married couples aged 60 and older, a husband's body dissatisfaction level was positively correlated with his wife's body dissatisfaction. However, the cross-sectional nature of the study means these findings may be due to similarity effects whereby people who were already similar to one another in terms of body image were drawn to one another. Furthermore, the study did not examine the presence of direct commentary or feedback body weight/shape between partners, which could have led them to become similarly body preoccupied over time. As such, it is unclear whether the correlation between partners' body image was due to modeling effects, other forms of social transmission such as direct feedback, or similarity effects. Nevertheless, the research demonstrating correlations between an individual's body image and the body image of various close counterparts (i.e., friends, parents) suggests it is quite possible that modeling may have contributed, even if only partly, to the observed relationship between spouses' body image.

Unlike the research on romantic partners, the interpersonal influence of friends' and peers' body image attitudes on an individual's body image has shown robust correlational relationships within the literature (Lieberman et al., 2001; Miething et al., 2018; Paxton et al., 1999; Webb and Zimmer-Gembeck, 2014; 2015). Social network analyses examining body image attitudes and behaviours within and across peer groups demonstrated that level of weight concern and the use of maladaptive weight control behaviours were shown to be more similar within a friend group than across different peer groups (Paxton et al., 1999). Furthermore, within an adolescent female friend group, a given individual's own body image concern, weight loss and dieting behaviour were predicted by how concerned she perceived her friends to be with

their body image and by how much the friends actually engaged in weight loss and dieting behaviours (Paxton et al., 1999). Indeed, direct comparisons of the relative impact of different types of social influence (i.e., direct feedback vs. modeling) support the idea that modeling of body image attitudes and behaviours play a pivotal role in shaping the body image of others. A meta-analysis recently showed that in terms of peer influence on bulimic symptoms, modeling had a stronger impact than encouragement to diet or weight/body-related teasing (Marcos et al., 2013).

Much of the research examining how peer and family body image attitudes affect one's own body image attitudes has been done at a trait level, examining how one's typical body image and/or eating behaviours relate to the average body image and eating patterns of those around them. However, there is also a limited amount of correlational research revealing situational interpersonal influences on body image and eating. A study using ecological momentary assessment demonstrated that recent exposure to fat-talk was associated with elevated body dissatisfaction, negative affect, body checking, and weight control/disordered eating behaviours (Jones et al., 2014). Additional research by Waring and Kelly (2020) examined how personal body image outcomes vary across different interpersonal relationships. They found that within relationships where the participant perceived the other to be more body preoccupied and less accepting of the participant's body, the participant was less appreciative of her own body, invested more in her appearance, and ate less intuitively.

**Experimental Research.** Empirical research lends support to the idea that displays of certain types of body image attitudes and behaviour can impact one's own body image at any given time across both parental and peer relationships, as well as one time interactions with strangers. A study by Handford and colleagues (2018) provided experimental support for the

correlational association between maternal modeling of body dissatisfaction and daughter body image disturbance. In this study, mother-daughter dyads viewed magazine images of thin women and mothers were instructed to make either self-critical comments about their own weight, shape and diet, or make no comments. Findings demonstrated that daughters who heard their mother make disparaging comments about their own weight, shape, and eating demonstrated more dysfunctional state body image and eating attitudes and ate significantly fewer sweets immediately after the magazine viewing activity than those whose mother made no comments.

Building on correlational research showing the detrimental impact of fat talk in ones daily life, studies have experimentally demonstrated the damaging effects of "fat talk"(Cruwys et al., 2016; Ousley et al., 2008; Salk & Engeln-Maddox, 2011; 2012; Shannon & Mills, 2015). Tucker et al. (2007) conducted a study in which a confederate and a participant were asked to verbally rate their satisfaction with their body. The confederate always went first and answered in either a self-derogatory, neutral, or self-aggrandizing way. Results showed that participants tended to match their verbal ratings of body satisfaction to those of the confederate, suggesting that, at least outwardly, people's satisfaction with their bodies may be influenced by the body satisfaction/dissatisfaction displayed by those around them. Unfortunately, this study did not measure internal (i.e., private) body satisfaction, so it is unclear whether these results were driven by actual changes in the participants' body image or by social reciprocity norms.

A study by Stice et al. (2003) had a thin confederate either talk to the participant about a neutral topic or talk to the participant about how dissatisfied she was with her body and the extreme measures she undertook to try to lose weight. Results of this study showed that participants who heard the confederate fat talk had higher body dissatisfaction, however the researchers did not assess or control for whether the participant engaged in fat talk themselves.

Subsequent research is contradictory regarding the impact of hearing versus engaging in fat talk with some studies suggesting that simply hearing fat talk is detrimental to one's own body image (Corning et al., 2014; Stice et al., 2003), and other research finding that it is the act of engaging in fat talk that is detrimental to one's own body image (Arroyo & Harwood, 2012; Lin & Soby, 2017). Still other research suggests that fat talk may impact the body image of those who hear it differently depending on the listener's average level of dietary restraint. Research that presented participants with either a fat talk vignette or a neutral vignette found that for women who tended to be higher in dietary restraint, their body dissatisfaction was less negatively impacted by exposure to the fat talk vignette than for women who tended to be lower in dietary restraint (Compeau & Ambwani, 2013). Furthermore, for women who tended to be higher in dietary restraint, exposure to the fat talk condition was associated with less food consumption than the neutral condition, while the food consumption of those in the neutral condition was unaffected by which vignette was presented. The authors suggest that this may be due to the fact that women who are high in dietary restraint may already think negatively about their bodies, leading to a ceiling effect, whereas for those low in dietary restraint, hearing fat talk may have triggered negative feelings about the body that are otherwise less salient. Additionally, among women who already attempt to restrict their eating, hearing fat talk appeared to facilitate these goals. Evidently, for people who tend to have more negative body image attitudes or behaviours, hearing fat talk may not increase their already dysfunctional body image thoughts and feelings, but may increase their propensity to engage in negative weight control behaviours.

**Qualitative Research.** Qualitative research supports the idea that exposure to modelled preoccupation with body image and weight control behaviours may be a direct contributor to young women's own body image concerns and decisions to engage in weight control behaviours.

In the qualitative study by Wertheim et al. (1997) examining the reasons that adolescent girls watch their weight found that direct pressure from friends and family to be thin was less common than indirect social influences such as modeling of negative body image, and that young girls are sensitive to these influences as evidenced in the following quotes:"…oh they just say "I'm going to go on a diet" and you think ooooo that may be a good idea. It makes me think: I am the same size as them. If they go on a diet, I should too." (Wertheim et al., 1997, p.348).
Furthermore, Wertheim et al. (1997) found that for adolescent girls, the body image self-attitudes and behaviours that their peers display emerged as a stronger contributor to their own body image attitudes and behaviours than any direct verbal feedback that their peer gives them about their body, for example: "You feel like you have to keep up with them, be as skinny as them, so you think you're going to go on a diet, and they say you don't need to, but deep down you feel like you have to" (pp. 348-349).

It appears that receiving direct negative feedback about one's body and eating may be less common than exposure to others who model body image preoccupation. Furthermore, if an individual in one's social environment demonstrates investment in the thin ideal through his or her actions (e.g., dieting), that person sends an indirect message that it is important and desirable to be thin. Although this possibility has not been directly tested through quantitative studies, qualitative reports suggest that this message may supersede direct verbal messages from that same individual that discourage dieting and body image preoccupation. This research suggests that one's own body image preoccupation may do harm to the body image of others, independent of one's verbal efforts to discourage negative body image. This information may have particularly important implications for individuals such as parents, clinicians, and teachers, as they are who are regularly observed by more moldable others.

Indeed, qualitative research on positive body image confirms the difficulty of maintaining positive body image and the ease with which one can fall into body negativity when faced with others' negative body image (Wood-Barcalow et al., 2010):

> "If you're around people who are picking at themselves or saying "I look bad" or "I hate my thighs" you are going to be more inclined to pick at yourself more and look at areas that aren't perfect. If you're around people who don't talk about that sort of thing it's easier to have positive body image" (p. 110).

Such studies suggest that the negative body image of those around us may adversely influence how we generally relate to our bodies.

**Empirical Evidence for the Transmission of Adaptive Body Image via Modeling**

There is far less empirical research examining whether the modeling of adaptive body image attitudes and behaviours can result in social transmission to others. To my knowledge, only three studies – two qualitative and one correlational – have directly examined this possibility. Arroyo and colleagues (2020) surveyed women across the lifespan to examine how recalled maternal communication behaviours impact daughter's body image. Results showed that maternal modeling of adaptive eating, physical activity and positive body talk was significantly related to daughters' current body appreciation and adaptive weight-related behaviours (i.e., engaging in physical activity and eating intuitively).

A qualitative study by Wood-Barcalow et al. (2010) examined the components of positive body image in college women and found evidence that being surrounded by others who have adaptive body image facilitates the development of adaptive body image in oneself:

> "I would just watch her (participant's sister) and see how she could be confident and interact with different people and how she felt about herself. It gave me a goal to work up to. I knew I could reach it because it had been done" (p.110).

Another qualitative study by Mafrici (2014) used a life history approach to examine peer influences on women's body image across the lifespan. This study revealed similar narratives, such that when women were surrounded by others who expressed confidence and comfort with their bodies it facilitated their own adaptive body image experiences:

> "It helps that I have friends who don't have perfect bodies, who don't seem to care that they have cellulite or big bums or whatever…To see them so unconcerned about it really helps me out too, like they don't care and therefore I shouldn't care either…Definitely their comfort and confidence about who they are helps me out a lot…They're like, 'that's just me and I'm really happy about who I am.' And I feel I should be like them, like why should I care so much? I am happier with my body now. That I should not care so much makes me happy; it makes my body happy." (p. 139)

The quotes from these two studies suggests that, consistent with Social Learning Theory, women may be able to observe in others the benefits of being accepting and appreciative towards one's body, and upon making these observations, may attempt to emulate these positive body image attitudes and behaviours themselves; however, more empirical research is needed to support this compelling idea.

**Thesis Objectives**

Just as research suggests that exposure to others who model dysfunctional body image behaviours is related to more negative body image (e.g., are preoccupied, concerned or distressed by their own bodies, or who engage in behaviour that signifies body dissatisfaction such as

weight loss attempts), it is important to understand whether being exposed to those who model more adaptive body image attitudes and behaviours (e.g., display little preoccupation with their body, eat intuitively, express appreciation for the functions their body performs) is related to having a more adaptive body image orientation. As reviewed above, the social learning theory principles that help to explain the transmission of maladaptive body image from one person to another may similarly help to explain why and how adaptive body image may be transmitted from one person to another. That is, upon observing the rewards associated with positive body image attitudes and behaviours, one may consciously or unconsciously feel more inclined to adopt them for themselves, and in so doing, may reap the associated benefits such as greater wellbeing, more rewarding social relationships, and better physical and mental health. Empirical research that addresses this possibility would greatly broaden our understanding of the social transmission of body image and would have possibly groundbreaking practical implications by highlighting the potentially positive role that we can all have in adaptively shaping each other's body image.

In my doctoral dissertation, I sought to address this important gap in the literature by examining how the social modeling of adaptive body image may help to not only reduce negative body image, but actively nurture and enhance the factors that comprise positive body image such as body acceptance, appreciation, and intuitive eating. I did this using both observational and experimental methodologies. The observational methods helped to establish the ecological validity these ideas and characterize how adaptive influences manifest in day-to-day life and the experimental methods helped to identify the specific types of adaptive body image modeling that offers benefits to observers experiencing acute body image distress. Although body image concerns span a diverse demographic range (Algars et al., 2010;

Drummond, 2005; Heinberg & Kraft, 2008), body image research has historically been conducted with women due to the relatively higher levels of body image and eating disturbances that women, particularly college-age women, have been shown to experience (Esnaola et al., 2010; Tiggeman, 2004; Tiggeman & Lynch, 2001). Given that the concept of socially transmitted adaptive body image is relatively novel, I chose to examine this phenomenon in college-aged women, a population in whom interpersonal transmission of negative body image has been well documented, and for whom adaptive interpersonal body image influences may be particularly beneficial.

***Study 1***

It is unclear whether interacting with others who display a more adaptive body image orientation affects individuals' body image and whether such interactions uniquely contribute to individuals' body image when controlling for the effects of exposure to body preoccupied others. Studies have shown that body image is negatively impacted by exposure to negative body image in others (e.g., Corning et al., 2014; Paxton et al., 1999; Lieberman et al., 2001; Stice et al., 2003), however studies have historically used cross sectional or experimental designs to establish this. Study 1 used a daily diary methodology to examine whether participants' daily interactions with others they perceived to be body focused (i.e., preoccupied with their weight/ shape, and who talked a lot about dieting/exercise) and non-body focused (i.e., those who were focused little on their weight/shape and ate intuitively) contributed uniquely to participants' body image. Such a design allowed for an examination of both the between- and within-persons relationship between exposure to non-body focused others and participants' body image and eating, while controlling for the contribution of exposure to body focused others. A between-persons relationship between exposure to non-body focused others and body image would indicate that

on average, individuals with higher average levels of exposure to non-body focused others in a week have better body image and eating. A within-persons relationship, established via this design, would suggest that a given individual experiences better body image and eating on days when she has more interactions with non-body focused others than what is typical for her.

***Studies 2 and 3***

The second set of studies used an experimental design to compare the impact of hearing different types of body image coping reactions on individuals' body image and coping in the face of a personal body image threat. In Study 2, we created three vignettes wherein a peer described how she coped with a body image threat. In line with social learning theory, we employed cognitive modeling, whereby the peer in each vignette verbalized her cognitive affective reactions to the body image threat, as well as what she did to ultimately reduce her distress and feel better about her body. Because self-compassion has been shown to both protect against negative body image outcomes and facilitate positive body image outcomes (Albertson et al., 2014; Kelly, Vimalakanthan, & Carter, 2014; Wasylkiw et al., 2012), we wanted to examine the unique benefits of hearing a self-compassionate coping reaction. As such, we compared the impact of hearing a self-compassionate coping reaction to a self-esteem enhancing and an affectively neutral coping reaction on body acceptance, body image self-compassion, and body image distress. Contrary to hypotheses, Study 2 revealed no effect of condition, however, participants experienced improvements in their body image across all three conditions. As such, the purpose of Study 3 was to understand which aspect of the coping vignettes from Study 2 conveyed body image benefits to the listener. Drawing on social learning theory literature related to "coping" versus "mastery" styles of cognitive modeling (Schunk, 1995; Schunk et al., 1987), new vignettes were created to isolate these components for comparison. This would allow us to

understand which of the following accounted for the benefits experienced across conditions in Study 2, and offers the greatest benefit to someone experiencing acute body image distress: a) simply hearing that another person experiences body image distress; b) hearing another person relate well to their body and express positive affect; or c) a combination of hearing someone express body image distress and cope with it effectively. As the goals and methodology of Study 3 followed directly from the results of Study 2 they were included in the same manuscript, which we intend to submit as one publication.

## Study 1: Exposure to Body Focused and Non-Body Focused Others over a Week: A Preliminary Investigation of Their Unique Contributions to College Women's Eating and Body Image

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### Abstract

This study investigated how exposure to non-body focused others (i.e., those who are not preoccupied with their body weight/shape or appearance) and exposure to body focused others uniquely affect young women's eating and body image over a week, within a day, and from one day to the next. For seven consecutive days, 92 female college students completed nightly online questionnaires about their daily experiences. Between-persons, multilevel modeling revealed that higher average levels of exposure to non-body focused others over the week uniquely predicted greater intuitive eating, greater body appreciation, and less dietary restraint, whereas higher average exposure to body focused other predicted these outcomes in the opposite direction. Within-persons, exposure to body focused others did not predict eating and body image but exposure to non-body focused others did. On days when women had more exposure to non-body focused others than their personal average level or than the previous day's level, eating and body image were better. Findings are the first to suggest that independent of exposure to body focused others, level of exposure to non-body focused others – within and across days – contribute positively to eating and body image.

**Introduction**

Body image is a complex multidimensional construct composed of thoughts, feelings, attitudes and behaviors related to one's body and weight (Thompson, Heinberg, et al., 1999). A plethora of research indicates adverse outcomes associated with poor body image including increased risk of psychopathology such as anxiety, depression and lower self-esteem (Johnson & Wardle, 2005; Kostanski & Gullone, 1998; Paxton et al., 2006; Wilson et al., 2013), as well as a greater risk of disordered eating (e.g., Goldschmidt et al., 2015; Neumark-Sztainer et al., 2006; Stice, 2002; Stice et al., 2011). Conversely, recent research suggests that positive body image is uniquely associated with greater self-esteem, optimism, proactive coping, intuitive eating (i.e., eating according to one's hunger/fullness signals and cravings), and less disordered eating (Avalos et al., 2005; Tylka & Wood-Barcalow, 2015).

Understandably, there has been a concerted effort in the field to determine what factors influence body image. Interpersonal factors, both familial and peer, have emerged as important in this regard as research shows a positive relationship between the body image levels of mothers and daughters (Kichler & Crowther, 2001; Rieves & Cash, 1996), married partners (Oh & Damhorst, 2009), and individuals in the same peer group (Paxton et al., 1999). Paxton and colleagues found that levels of body image concern and use of extreme weight loss behaviors (such as fasting, vomiting, and using laxatives) amongst teenage girls were uniquely predicted by how often girls talked about dieting and weight with their friends, how preoccupied with weight and dieting they perceived their friends to be, and how often their friends actually used extreme weight loss behaviors themselves. When looking within persons, Kelly, and colleagues (2016) found that unless college women treated themselves with more self-compassion than was typical for them, frequent interactions with body focused others on a given day were associated with

greater body image concerns, a lesser tendency to eat intuitively, and less body appreciation. Further evidence for the social influences on body image comes from the literature on "fat talk," which refers to talking negatively about one's own body or eating (Nichter & Vuckovic, 1994). Both correlational and experimental studies have shown that engaging in and also hearing fat talk are associated with increased body dissatisfaction, negative affect, and disordered eating (Cruwys et al., 2016; Ousley et al., 2008; Salk & Engeln-Maddox, 2011; 2012). These studies suggest that exposure to people who display attitudes and behaviors reflective of body preoccupation can have damaging effects on one's own body image and eating.

Although the problematic consequences and correlates of interacting with body focused others are well documented, no studies to our knowledge have directly examined the effects of interacting with others who simply place less importance on their body weight/shape – that is, non-body focused others. Although there is some research suggesting that interacting with those who espouse body satisfaction and acceptance leads women to feel more satisfied with and accepting of their own bodies (Rudiger & Winstead, 2013; Tucker et al., 2007), studies have found that college women consider positive body talk to be less typical, more surprising, and also less credible than negative talk about one's body (Barwick et al., 2012; Corning & Bucchianeri, 2016). Thus, it may be that rather than an overt display of body positivity, a more typical alternative to encountering body-preoccupied others is interacting with others who do not seem preoccupied with trying to control their body weight and shape. It remains unknown whether interacting with others who are not body-preoccupied might influence one's own body image attitudes and behaviors.

There is indirect evidence to suggest that interactions with non-body focused individuals may, in fact, be personally beneficial. In one study, participants heard a vignette in which

someone displayed a challenging response to fat talk that minimized the importance of focusing on one's physical appearance (e.g., "I think feeling happy and healthy is so much more important than focusing on how I look") or else a colluding one (e.g., "Yeah I've been thinking about going on a diet too. Maybe then I wouldn't feel so fat") (Ambwani et al., 2017). Those who heard the challenging response felt less negative affect and reported a lower likelihood of subsequently engaging in fat talk. Anecdotes from qualitative research further support the idea that not only is being around others who are focused on their body detrimental to one's own body image, but that interacting with non body focused others can be helpful for one's body image:

> " If you're around people who are picking at themselves or saying " I look bad" or "I hate my thighs" you're going to be more inclined to pick at yourself more and look at areas that aren't perfect. If you're around people that don't talk about that sort of thing it's easier to have positive self-image" (Wood-Barcalow et al., 2010, p. 110).

Thus, there is preliminary, albeit indirect, support for the notion that simply being exposed to others who are not focused on the appearance of their bodies may positively influence one's own body image.

Social Learning Theory (Bandura, 1977) might help to explain how exposure to body focused and non-body focused others might affect one's own body image and eating attitudes. The theory suggests that humans are likely to learn and enact a given attitude or behavior if they observe – consciously or not – someone else experience reinforcing consequences for displaying said attitude or behavior. Given the current culture's promotion of the thin ideal, individuals who are preoccupied with their body and/or pursue the thin ideal may receive certain forms of reinforcement, such as compliments on their body or for their dedication to a weight-loss regimen (Wertheim et al., 1999). An observer may notice this reinforcement, consciously or

unconsciously, thereby motivating her to adopt similar body-preoccupied attitudes and behaviors. Alternatively, one might interact with others who display less preoccupation with their appearance, and who therefore eat in a more intuitive and less restrictive manner. Here, an observer may notice the benefits of being less body focused, for example, the freedom associated with eating what one desires without guilt and anxiety and the ability to pursue meaningful relationships and activities without undue concern about one's appearance (Andrew et al., 2015; Sandoz et al., 2013; Schoenefeld & Webb, 2013). This reinforcement may then induce the observer to adopt a similar orientation toward her own body and eating to experience these same outcomes.

Although theoretical and empirical studies provide indirect and/or preliminary support for the idea that exposure to non-body focused others may be beneficial – just as exposure to body focused others is costly – no research to our knowledge has examined whether these forms of exposure are indeed unique contributors to people's body image and eating habits. Just as positive body image contributes uniquely to eating, wellbeing, self-esteem, and coping beyond the contribution of negative body image (Avalos et al., 2005; Tylka & Wood-Barcalow, 2015), exposure to non-body focused others might also contribute uniquely to body image and eating beyond the variance explained by exposure to body focused others. If this were the case, important theoretical implications would ensue about the role of social factors in eating and body image. There would also be important practical implications regarding not only what social contexts and groups to avoid but also which ones to seek out.

A correlational study would allow researchers to isolate the unique variance in body image and eating explained by exposure to body focused and exposure to non-body focused others. However, cross-sectional correlational designs frequently rely on retrospective recall over

a long period of time, which can result in biased and inaccurate recall (Schwarz & Sudman, 1994). We therefore sought to examine our research questions in the context of a seven-day daily diary study. First, such a design would result in more accurate reports from participants on their experiences by having them reflect on the last 24 hours only. Second, unlike cross-sectional correlational designs, obtaining daily data from participants for a week makes it possible to examine the extent to which average levels of each form of social exposure over a week contribute to body image and eating between-persons, and to examine the extent to which fluctuations in these forms of social exposure within a person from one day to the next contribute to her body image and eating. Identifying the levels at which relationships are present and absent has important theoretical and practical implications (Curran & Bauer, 2011). Finally, such a design would allow us to ascertain the directionality of the relationship between these forms of social exposure and body image and eating patterns to determine whether certain types of social interactions precede body image and eating patterns, and/or whether eating habits and body image influence the extent to which others are perceived to be body focused and non-body focused.

***Study Objectives and Hypotheses***

The main goal of the current study was to examine the unique contributions of exposure to body focused others and exposure to non-body focused others on college women's own body image and eating both between-persons, over the course of a week, and within-persons, from one day to the next and within a given day. At the between-persons level, we hypothesized that average levels of exposure to non-body focused others and exposure to body focused others over the week would contribute unique variance to body image and eating attitudes. We hypothesized 1a) that college women who on average had more frequent interactions with non-body focused

others over the week would generally report better overall body image and higher body appreciation, and more intuitive and less restrained eating. We also expected 1b) that those with a higher mean frequency of interactions with body focused others over the week would have worse overall body image and eating. At the within-persons level, we hypothesized that 2a) on days when participants had more exposure to non-body focused others than what was typical for them, their body image would be better and their eating would be less restrained and more intuitive. We also expected 2b) that on days when women had more exposure to body focused others than usual, body image and eating would be worse. Finally, we hypothesized 3) that changes in the frequency of these forms of exposure from one day to the next would predict participants' subsequent eating and body image (e.g., increased exposure to non-body focused others would be associated with subsequently more adaptive eating and body image), but that changes in their eating and body image would not predict the frequency of their subsequent self-reported exposure to body focused and non-body focused others.

## Method

### *Participants*

In order to meaningfully examine within-persons variability, participants who completed at least four of the eight surveys were included in the analyses. One hundred and eleven out of 143 participants met this criterion, 15 of whom were removed for failing to complete their surveys within the required window of time. Another 4 participants who had outlying BMI's (> 3 SDs from the mean; all happened to be above 40) were subsequently removed, leaving a final sample of 92 female undergraduates. Participant's age ranged from 17 to 25, with an average age of 19.7 (SD = 1.93). The ethnic composition of the sample was 50% Caucasian, 21% East Asian, 1.6% Southeast Asian, 4% Black/African, 9.7% South Asian, 1.6% Middle Eastern, 1.6% West

Indian/Carribean, 1.6% Aboriginal, 8.1% unknown. 52% reported that they were single, 37% in a relationship, and 11% casually dating. The mean number of surveys completed was 6.67 (*SD* = 1.2). Eighty-three percent of participants completed 6 or more surveys and 25% completed all eight, despite only being asked to complete seven out of eight. Data conformed to the missing at random assumption and study day did not predict the likelihood of missing data.

***Procedure***

This study was approved by the university's research ethics committee and all participants provided consent. Participants were made aware in study advertisements that they would be asked about their personal body-image experiences. However, in order to avoid demand characteristics, additional peripheral study variables were emphasized, and participants were not aware of the specific hypotheses of the study. The study was advertised through the university's research participant pool to all female undergraduate students enrolled in psychology courses. The study was called "A Daily Diary Study of Personality, Feelings and Body Image" and participants received additional research credit for a psychology course in compensation for their involvement. Each participant completed the study over an eight-day period. Each day at 4:00 pm participants were emailed a link to the complete the survey online via Qualtrics. Participants were given a 7-hour window of time (from 4:00-11:00 pm each night) within which to complete the survey to account for any evening demands or obligations that would have put constraints on participants' ability to complete the survey otherwise. Participants were instructed to complete at least seven out of the eight surveys that they were sent.

***Measures***

**BMI.** BMI was assessed via self-reported weight and height four to six days before the daily diary portion of the study. The mean BMI in the sample was 22.47 (*SD* = 3.28). All other

measures were completed on a nightly basis with participants reporting on their experience that day. As such, these measures were modified so that item wording assessed participants' thoughts, feelings and behavior "that day" rather than in the past, or on average.

**Exposure to Non-Body Focused and Body Focused Others**. To assess participants' frequency of daily interactions with body focused and non-body focused others, the research team created a five-item face valid measure. It should be noted that the brevity of this measure stems from the fact that the study was developed with other primary research questions in mind, limiting the number of additional items that could be added. Because we believed that participants were likely to have multiple interactions throughout a day, it would not be feasible to collect details about each specific interaction and interaction partner at the end of the day without substantially increasing the burden on participants, and/or compromising the accuracy of the data collected. As such, we asked them to provide an overall rating of the frequency of their interactions with certain types of people each day from 1 (not at all) to 5 (constantly). The question asked, "Today, how often did you interact with people who…" and then provided five statements. These statements were factor analyzed using Principle Component Analyses and the scree plot revealed two underlying factors as expected. A Promax rotation was first applied, and revealed two uncorrelated factors ($r$ = .08) allowing us to apply a Varimax rotation, which subsequently revealed that the two factors explained 23.5 % and 17.1% of the variance. Items loading onto the first factor (Exposure to Body Focused Others) were: "were talking about dieting" (.87), "were focused on body image" (.94), and "were focused on exercise and working out" (.83). Items loading onto the second factor (Exposure to Non-Body Focused Others) were: "had 'normal' eating habits (i.e., people who eat flexibly without being restrictive or overly preoccupied with calories)" (.91) and "focus little on body image" (.91). None of the items

evidenced cross loadings of more than .20 with the other factor. The range of Cronbach's alphas across study days was .85 to .89 for Exposure to Body-Focused Others and .73 to .86 for Exposure to Non-Body Focused Others. Average frequency of exposure to non-body focused others over the week was 2.97 (*SD* = .87) and average frequency of exposure to body focused others over the week was 2.00 (*SD* = .83).

**Body Appreciation Scale.** Body appreciation was measured using the Body Appreciation Scale (BAS, Avalos et al., 2005). Body appreciation is the ability to value, respect and care for one's body regardless of its size or shape. This 13-item scale was modified to assess the past 24 hours and included items such as "Despite its flaws I accepted my body for what it was" and "My self-worth was independent of my body shape or weight". Participants rated these items daily on a scale from 1 (*never*) to 5 (*always*) according to how they felt about their body that day. The BAS demonstrates good construct and incremental validity as it is negatively related to body preoccupation and dissatisfaction (*r*s = -.79 and -.73 respectively), and positively related to favourable appearance evaluation (*r* = .68). Additionally, body appreciation contributes unique variance to indices of psychological wellbeing over and above other body image measures (Avalos et al., 2005). The range of Cronbach's alphas across study days was .95 to .96 in the current study. Mean weekly BAS across participants was 3.37 (*SD* = .76).

**Body Image States Scale**. Daily satisfaction with one's body was measured using the Body Image States Scale (Cash, Fleming, Alindogan, et al., 2002). This six-item scale is rated on a 9-point Likert scale that asks participants to endorse statements about their body satisfaction. Sample items from our modified scale included, "Today I felt extremely 'satisfied' to 'extremely dissatisfied' with my body size and shape" and "Today I felt that I looked 'a great deal better' to 'a great deal worse' than the average person". The scale has been shown to be

internally consistent, valid and stable (Cash et al., 2002). The Cronbach's alphas across the study days was .83 to .90. Mean weekly score across participants was 5.10 (*SD* = 1.11).

**Intuitive eating**. The 23-item Intuitive Eating Scale-2 (IES-2; Tylka & Kroon Van Diest, 2013) was used to assess the extent to which participants ate intuitively in accordance with their satiety signals and/or cravings, as opposed to dietary rules and/or weight goals. Each night participants completed the IES-2 according to their eating behavior that day by rating items such as "If I was craving a certain food I allowed myself to have it" and "I tried to avoid certain foods high in fat, carbohydrates or calories" (reverse scored) on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The IES-2 has shown good reliability and validity (Tylka & Kroon Van Diest, 2013). Cronbach's alphas ranged from .87 to .90 across days in the current study. Average intuitive eating over the week was 3.48 (*SD* = 0.48).

**Dietary Restraint**. A one-item measure taken from the Restraint subscale of the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994) assessed dietary restraint, in line with prior research using this item as a standalone measure (Kelly et al., 2016). The statement, "I have been trying to limit the amount and/or types of food I eat in order to influence my shape or weight (whether or not I have succeeded)" was rated by participants from 1 (*not at all*) to 5 (*frequently*) according to their eating habits that day. Mean scores on this brief measure across study days were strongly correlated with scores on the Restraint subscale of the EDE-Q (*r* = .67), which was administered 4-6 days before the daily diary stage of data collection. This correlation supports the item's validity as an indicator of dietary restraint. Average weekly dietary restraint across participants was 2.15 (*SD* = 1.02).

## Results

### *Analytic Strategy.*

Multilevel modeling, using PROC MIXED in SAS 9.3, was used to test our hypotheses. Multilevel modeling is the preferred approach when examining hierarchical data sets such as this one in which assessment days (level-1) were nested within participants (level-2). By using maximum likelihood estimation, multilevel modeling makes use of all available data, including from those participants for whom observations are missing, an inevitable occurrence when administering multiple repeated measures over time (Snijders & Bosker, 1999). Before carrying out our analyses, all predictor variables were centered. In order to examine Hypothesis 1, between-persons (level-2) predictors were created by taking the mean of participants' scores on the variable in question across days of the study. Between-persons exposure to body focused and non-body focused others therefore represented the average level of daily exposure to these people that each participant experienced over the course of the study period.

Two sets of within-person (level-1) predictor variables were calculated for exposure to non-body focused and body focused others. In the first set that addressed Hypothesis 2, we subtracted participants' relevant exposure score on a given day *t* from their personal mean level of exposure across the week. These within-person variables represented the extent to which a participant had more or less exposure to non-body focused and body focused others on day *t* of the week *relative to her personal average level of exposure over the week.* We can therefore refer to these within-person scores as daily deviations from a participant's personal mean. For the second set of within-persons predictor variables that addressed Hypothesis three, the LAG function in SAS was first used to create variables representing the level of each variable on the previous day, i.e., *t-1*. The DIF function was then used to create variables representing the

change in a participant's score on a given variable between the present day *t* and the previous day *t-1*. Difference variables were also created for the dependent variables – intuitive eating, body acceptance, dietary restraint, and body image. We used these difference variables to verify that it was not in fact changes in the various dependent variables from one day to the next that were contributing to more or less (actual or perceived) subsequent exposure to body focused and non-body focused others.

Hypotheses were tested with two series of multilevel models. Dependent variables were participants' raw scores on measures of body image and eating across all study days. In the first set of models, we examined how different social interactions might influence eating and body image within a given day and across a week. Fixed effects at level-1 were daily deviation in exposure to body focused others and daily deviation in exposure to non-body focused others. Level-2 fixed effects were the covariate BMI, mean exposure to body focused others, and mean exposure to non-body focused others. Including exposure to body focused and non-body focused others as simultaneous predictors allowed us to control for any shared variance between the variables, which may have represented participants' amount of exposure to other people more generally.

In the second set of models, we examined how changes in exposure to body focused and non-body focused others from one day to the next might influence eating and body image. The only level-2 fixed effect was the covariate BMI. Level-1 fixed effects were the two within-persons difference scores representing changes in a participant's level of exposure to non-body focused others from the preceding day and changes in her level of exposure to body focused others, as well as a covariate lagged variable representing levels of the relevant dependent variable on the preceding day. This model would enable us to determine whether the change in

exposure to non-body focused and/or body focused others a given participant experienced from yesterday to today contributed to her body image and eating today, controlling for her body image and eating yesterday.

***Correlations and Intraclass Correlations***

Intraclass correlations (ICCs) were computed for all study variables (see Table 1). ICCs represent the proportion of total variance in scores that can be attributed to between-persons differences (Koch, 1982). The ICCs for exposure to body focused others and exposure to non-body focused others were .50 and .44 respectively. These numbers indicate that level of exposure to these types of people varied roughly as much between-persons over the week as it did within a given person from one day to the next. Exposure to non-body focused others, in particular, showed slightly more temporal variability than stability. As reported elsewhere (Kelly et al., 2016), ICCs for criteria variables ranged from .56 (dietary restraint) to .77 (body appreciation), indicating that although all variables displayed more between-persons variance, scores on criteria variables still varied within persons from one day to the next.

Within- and between-persons correlations between study variables are presented in Table 1, where within-persons correlations reflect the relationship between daily deviations on day *t*. There was a small positive correlation between exposure to non-body focused and exposure to body focused others at both the between-persons and within-persons level, perhaps reflecting an overlap in frequency of weekly and daily social interactions more broadly. At the within-persons level, neither form of exposure was related to criteria variables. At the between-persons level, a higher mean level of exposure to non-body focused others was associated with higher mean levels of intuitive eating, over the week. A higher mean level of exposure to body focused others

was associated with lower mean levels of intuitive eating and body appreciation ($p < .10$), and higher mean levels of dietary restraint.

**Table 1**

*Zero-Order Correlations, Intraclass Correlations (ICCs), and Means and Standard Deviations (SDs) of Study Variables*

| | BMI | Exposure to non-body focused | Exposure to body focused | Intuitive eating | Dietary restraint | Body appreciation | Body satisfaction | ICC | Mean (SD) |
|---|---|---|---|---|---|---|---|---|---|
| BMI | — | -.09 | .11 | -.14 | .33 ** | -.24 * | -.31 ** | — | 22.47 (3.28) |
| Exposure to non-body focused | — | — | .23 * | .36 *** | -.08 | .15 | .13 | .44 | 2.97 (0.87) |
| Exposure to body focused | — | .22 * | — | -.28 ** | .36 *** | -.20 $^{t}$ | -.05 | .50 | 2.00 (0.83) |
| Intuitive eating | — | .10 | .06 | — | -.49 *** | .62 *** | .46 *** | .66 | 3.48 (0.48) |
| Dietary restraint | — | .07 | .00 | -.10 | — | -.46 *** | -.40 *** | .56 | 2.15 (1.02) |
| Body appreciation | — | .12 | .07 | .32 ** | .03 | — | .77 *** | .77 | 3.37 (0.76) |
| Body satisfaction | — | .15 | -.03 | .22 * | -.07 | .43 *** | — | .57 | 5.10 (1.11) |

$^{t}$ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

*Note.* Between-persons correlations are above the diagonal, within-persons correlations are below.

### *Multilevel Models Predicting Body Image Variables*

**Body Appreciation.** At the between-persons level, mean exposure to non-body focused others (Hypothesis 1a) positively predicted body appreciation over the week, and mean exposure to body focused others (Hypothesis 1b) negatively predicted body appreciation at a trend-level, $p = .07$ (Table 2). Within-persons, daily deviations in exposure to non-body focused others (Hypothesis 2a) positively predicted body appreciation, but daily deviations in exposure to body

focused others (Hypothesis 2b) was not a predictor, $p = .68$. As shown in Table 3, preceding change in exposure to non-body focused others was predictive of that day's body appreciation at a trend level while exposure to body focused others was not a significant predictor ($p = .51$). Furthermore, changes in body appreciation from the preceding day did not predict that day's exposure to non-body focused others, $\beta = 0.04$, $SE = 0.07$, $p = .59$, or body focused others $\beta = -0.08$, $SE = 0.07$, $p = .30$ (Hypothesis 3). In sum, participants who on average had greater interactions with non-body focused others over the week also tended to have higher average levels of body appreciation. In addition, a given participant's body appreciation was higher on days when she was exposed to more non-body focused others than they usually were, and when their exposure to non-body focused others was higher than the previous day.

**Body Satisfaction.** There were no between-persons predictors of body satisfaction as assessed by our daily version of the Body Image States Scale (Hypothesis 1). At the within-persons level, daily deviation in exposure to non-body focused others (Hypothesis 2a) was a positive predictor but daily deviation in exposure to body focused others (Hypothesis 2b) was not a significant predictor, $p = .60$ (see Table 2). Therefore, participants reported better body satisfaction on days when they reported more exposure to non-body focused others than what was typical for them. In the second model (see Table 3), within persons change in exposure to non-body focused others from the preceding day was significantly predictive of that day's body satisfaction suggesting that increases in exposure to non-body focused others compared to the previous day was related to better body satisfaction. Changes in exposure to body focused others from the previous day did not significantly predict body image $p = .86$. Additionally, changes in body satisfaction from the previous day did not predict that day's exposure to non-body focused others ($\beta = 0.03$, $SE = 0.03$, $p = .33$) or exposure to body focused others ($\beta = 0.02$, $SE = 0.03$, $p =$

.52), providing further evidence that it was differences in exposure to non-body focused others across days that influenced body satisfaction on a given day rather than the vice versa (Hypothesis 3).

### *Multilevel Models Predicting Eating Variables*

**Intuitive Eating.** At the between persons-level, mean exposure to non-body focused others (Hypothesis 1a) was a positive predictor of intuitive eating and mean exposure to body focused others (Hypothesis 1b) was a negative predictor (see Table 2). At the within-persons level in the first model, there was a trend for daily exposure to non-body focused others (Hypothesis 2b) to positively predict intuitive eating, $p = .05$, whereas daily exposure to body focused others (Hypothesis 2b) was not a significant predictor (see Table 2). At the within-persons level in the second model, preceding change in exposure to non-body focused others was a significant positive predictor of intuitive eating on a given day whereas preceding change in exposure to body focused others was not ($p = .43$) (see Table 3). Two follow-up multilevel models sought to shed further light on the directionality of these relationships and examined whether preceding changes in intuitive eating predicted exposure to body focused and non-body focused others. In these models, changes in intuitive eating from one day to the next significantly predicted exposure to non-body focused others $\beta = 0.25$, $SE = 0.09$, $p = .005$, but did not predict exposure to body focused others, $\beta = 0.10$, $SE = 0.09$, $p = .27$ (Hypothesis 3). Therefore, participants typically ate more intuitively if their average level of exposure to non-body focused others was high, and less intuitively if their average level of exposure to body focused others was high. On days when participants had more exposure to non-body focused others than usual and on days when this exposure was greater than the day before, their intuitive eating was also

greater. In addition, participants reported greater exposure to non-body focused others on days when their intuitive eating was greater than the day before.

**Dietary Restraint.** As shown in Table 2, at the between-persons level, mean exposure to non-body focused others (Hypothesis 1a) negatively predicted dietary restraint at a trend level, and mean exposure to body focused others (Hypothesis 2b) was a significant positive predictor of restraint. At the within-persons level, daily deviations in exposure to non-body focused others and in exposure to body focused others did not significantly predict restraint (Hypothesis 2a and 2b) (Table 2). In the second model, preceding change in exposure to non-body focused others was a significant negative predictor of dietary restraint, while preceding change in exposure to body focused others was not ($p$ = .18) (Table 3). Additional multilevel models showed that changes in dietary restraint from one day to the next did not significantly predict exposure to non-body focused others, $\beta$ = -0.04, $SE$ = 0.03, $p$ = .17, or exposure to body focused others $\beta$ = -0.03, $SE$ = 0.03, $p$ = .29 (Hypothesis 3). Thus, participants who typically had higher levels of exposure to body focused others over the week tended to show more dietary restraint on average, and those who were generally more exposed to non-body focused others showed less. Additionally, participants reported engaging in less dietary restraint on days when their exposure to non-body focused others had increased from the previous day.

**Table 2**

*Fixed Effects for Models Predicting Intuitive Eating, Dietary Restraint, Body Appreciation and State Body Image for Between- and Within-Persons Effects*

| | Fixed Effect | β(SE) | F | DF |
|---|---|---|---|---|
| **Intuitive Eating** | Intercept | 3.52(0.05) | — | 90 |
| | Between Persons Predictors | | | |
| | Average non-body focused exposure | 0.25 (0.05)*** | 22.39*** | 90 |
| | Average body focused exposure | -0.23 (0.06)*** | 17.38*** | 90 |
| | Within Persons Predictors | | | |
| | Deviation non-body focused exposure | 0.04 (0.02)* | 5.72** | 432 |
| | Deviation body focused exposure | 0.02 (0.02) | 1.47 | 432 |
| **Dietary Restraint** | Intercept | 2.19(0.10) | — | 84 |
| | BMI | 0.46(0.16) | 8.32** | 84 |
| | Between Persons Predictors | | | |
| | Average non-body focused exposure | -0.19 (0.11) $^{t}$ | 2.85 | 84 |
| | Average body focused exposure | 0.48 (0.12)** | 15.63** | 84 |
| | Within Persons Predictors | | | |
| | Deviation non-body focused exposure | 0.00 (0.05) | 0.00 | 406 |
| | Deviation body focused exposure | 0.06 (0.06) | 0.96 | 406 |
| **Body Appreciation** | Intercept | 3.35 (0.08) | — | 83 |
| | BMI | -0.27 (0.13)* | 4.38* | 83 |
| | Between Persons Predictors | | | |
| | Average non-body focused exposure | 0.18 (0.09)* | 4.07* | 83 |
| | Average body focused exposure | -0.18 (0.10) $^{t}$ | 3.45 $^{t}$ | 83 |
| | Within Persons Predictors | | | |
| | Deviation non-body focused exposure | 0.05 (0.02)* | 5.27* | 406 |
| | Deviation body focused exposure | 0.01 (0.02) | 0.17 | 406 |
| **Body Satisfaction** | Intercept | 5.06 (0.12) | — | 84 |
| | BMI | -0.53 (0.19)** | 7.53** | 84 |
| | Between Persons Predictors | | | |
| | Average non-body focused exposure | 0.18 (0.14) | 1.70 | 84 |
| | Average body focused exposure | -0.08 (0.15) | 0.30 | 84 |
| | Within Persons Predictors | | | |
| | Deviation non-body focused exposure | 0.12 (0.05)* | 5.12* | 407 |
| | Deviation body focused exposure | -0.03 (0.06) | 0.28 | 407 |

$^{t}$ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

*Note*. BMI was an initial covariate in all models but was removed when it was not a significant predictor of a given criterion variable, which was the case for intuitive eating. Deviation refers to the extent to which scores on a particular day departed from participants' personal average score over the week.

**Table 3**

*Fixed Effects for Models Predicting Intuitive Eating, Dietary Restraint, Body Appreciation and State Body Image Based on Changes in Exposure From the Previous Day*

| | Fixed Effect | β(SE) | F | DF |
|---|---|---|---|---|
| **Intuitive Eating** | | | | |
| | Intercept | 3.52(0.05) | _____ | 82 |
| | Lagged Intuitive Eating | -0.16(0.05) | 9.25** | 335 |
| | Within Persons Predictors | | | |
| | Difference non-body focused exposure | 0.02(0.01) | 4.29* | 335 |
| | Difference body focused exposure | 0.01(0.01) | 0.64 | 335 |
| **Dietary Restraint** | | | | |
| | Intercept | 2.14(0.11) | _____ | 76 |
| | Lagged Dietary Restraint | -0.29(0.05) | 31.12*** | 314 |
| | BMI | 0.55(0.18) | 9.08* | 74 |
| | Within Persons Predictors | | | |
| | Difference non-body focused exposure | -0.08(0.03) | 6.17* | 314 |
| | Difference body focused exposure | 0.05(0.04) | 1.83 | 314 |
| **Body Appreciation** | | | | |
| | Intercept | 3.34(0.08) | _____ | 76 |
| | Lagged Body Appreciation | -0.24(0.06) | 15.15** | 316 |
| | BMI | -0.34(0.14) | 5.74* | 74 |
| | Within Persons Predictors | | | |
| | Difference non-body focused exposure | 0.03(0.02) | 3.33$^{t}$ | 316 |
| | Difference body focused exposure | 0.01(0.02) | 0.43 | 316 |
| **Body Satisfaction** | | | | |
| | Intercept | 5.08(0.13) | _____ | 76 |
| | Lagged Body Satisfaction | -0.16(0.05) | 9.94** | 316 |
| | BMI | -0.49(0.21) | 5.35* | 74 |
| | Within Persons Predictors | | | |
| | Difference non-body focused exposure | 0.10(0.04) | 7.80** | 316 |
| | Difference body focused exposure | -0.01(0.04) | 0.03 | 316 |

$^{t}$ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

*Note*. BMI was an initial covariate in all models but was removed when it was not a significant predictor of a given criterion variable, which was the case for intuitive eating. Lagged variables represent scores from the previous day $t - 1$. Difference scores represent the difference from day *t* and the previous day t-1.

In summary, levels of exposure to non-body focused others uniquely predicted intuitive eating, dietary restraint, and body appreciation at the between-persons level. At the within-persons level, a greater-than-usual level of exposure to non-body focused others uniquely predicted greater body appreciation, intuitive eating and better body satisfaction on that day. Furthermore, increased exposure to non-body focused others relative to the previous day was associated with greater intuitive eating, body appreciation, and body satisfaction, as well as less dietary restraint. Exposure to body focused others was uniquely predictive of less body appreciation and intuitive eating, and greater dietary restraint at the between persons level only. Within-persons, exposure to body focused others was not predictive of body image or eating within a day or from one day to the next. Finally, with the exception of intuitive eating, changes in eating and body image from one day to the next did not predict subsequent self-reported exposure to non-body focused or body focused others.

**Discussion**

The current study examined whether college women's level of exposure to body focused and non-body focused others – over a week, within a day, and from one day to the next – uniquely contributed to their body image and eating behavior. Results supported Hypothesis 1a and 1b such that exposure to non-body focused and body focused others each uniquely predicted body image and eating outcomes at the between-persons level, with exposure to non-body focused others predicting more adaptive body image outcomes. Our second hypothesis evidenced partial support such that participants' body image and eating were better on days when they encountered more non-body focused others than usual (Hypothesis 2a). However, contrary to Hypothesis 2b, more exposure to body focused others than usual was not related to body image

and eating within a day. Our third hypothesis was also partly supported. Changes in frequency of exposure to non-body focused others – but not body focused others – from one day to the next was predictive of subsequent eating and body image, whereas in general, changes in eating and body image from the previous day did not influence subsequent reports of exposure to body focused or non-body focused others.

These findings are the first to suggest that social interactions with non-body focused others (i.e., others who focus little on controlling their body and eating) contribute uniquely to college women's body image and eating when controlling for the contribution of interactions with body focused others. Moreover, results suggest that exposure to non-body focused others are important both between- and within-persons. At the between-persons level, women who had consistently higher levels of exposure to non-body focused others over the week also tended to have on average, more positive body image (i.e., greater body appreciation and body satisfaction) and importantly, this relationship was not accounted for by their level of exposure to body focused others. In addition, women who on average interacted more frequently with body focused others reported more maladaptive body image and eating (i.e., lower body appreciation and greater dietary restraint) even when accounting for their exposure to non-body focused others. This study is the first to our knowledge to demonstrate that both these forms of exposure contribute unique variance to women's eating and body image, and that a greater level of exposure to adaptive body image displays in others may benefit women's own body image.

At the within-persons level, results revealed that the frequency of college women's interactions with non-body focused others over the week displayed moderate variability from day-to-day, and that these fluctuations were associated with fluctuations in their personal body image and eating. Specifically, more daily exposure to non-body focused others than usual was

associated with women relating to their bodies, and eating, more adaptively than usual. We also found that increases in exposure to non-body focused others from one day to the next were associated with less restrained and more intuitive eating, and better body image, on the subsequent day. Of note, in nearly all cases, day-to-day changes in body image and eating did not influence participants' subsequent self-reported exposure to body focused or non-body focused others. Although replication is needed, these results suggest that over the days of the study, women's body image and eating did not lead them to perceive others' eating and body image attitudes in a certain way, or to affiliate more or less with certain types of people. Rather, the people that young women were interacting with led them to have certain types of body image and eating experiences.

The findings of this study extend previous research showing that body-preoccupied attitudes and behaviors in others are related to more maladaptive body image attitudes and eating behavior in self (Kelly et al., 2016; Oh & Damhorst, 2009; Paxton et al., 1999). However, the preliminary results of this study suggest that routine exposure to body focused others may be what is damaging to women's body image and eating, whereas day-to-day increases in this type of exposure may be less influential. Interestingly, though, exposure to non-body focused others was predictive of outcomes at both between- and within-persons levels. Given that the ICCs for exposure to non-body focused and body focused others were similar, (.44 and .50 respectively), the fact that the former contributed to outcomes within-persons and the latter did not cannot be explained by the magnitude of within-person variability women experienced in these forms of exposure. Instead, it seems that participants' eating and body image were only sensitive to day-to-day fluctuations in exposure to non-body focused others.

Although these findings should be replicated, it is interesting to speculate as to why day-to-day variability in exposure to non-body focused others emerged as important, whereas variability in exposure to body focused others did not. Social Learning Theory provides a possible explanation. Within the current culture women are socially reinforced for being thin (i.e., receive compliments, have more success romantically) and may face stigma for being heavier, which this theory would see as a punishment (Puhl et al., 2008; Puhl & Brownell, 2001). Indeed, women implicitly associate being heavy with social rejection/punishment and activating this association leads women to restrict their eating (Strahan et al., 2007). Given the prevalence of the thin ideal, it may be that even on days when women were interacting with fewer body focused others than usual, the associations of weight with social acceptance/rejection were still frequently activated by other means, i.e., by exposure to social media, diet culture, television and magazines. As such, fluctuations in levels of body focused social interactions may not have been enough to prompt changes in eating and body image. However, encountering more non-body focused others than usual, or than the day before, may serve to actively draw women's attention to the rewards associated with eating flexibly and being less preoccupied with one's body, and reinforce in them more adaptive body image schemas and eating behavior (Wood-Barcalow et al., 2010). Relatedly, Strahan et al. (2007) found that exposure to media containing famous and successful female celebrities who were overweight was related to subsequently less restrained eating, and authors contend that this was because the images demonstrated to participants that success and happiness is not contingent on weight and appearance. While interesting to consider, no research has directly tested whether such Social Learning processes are indeed at play in determining ones daily and or average body image attitudes and behaviors, thus future research should test these underlying mechanisms. With the rise of movements promoting a broader

conceptualization of health and beauty (i.e., "Health at every size" and "Fat acceptance") it will also be important for future research to consider how these campaigns may shift media content and sociocultural beauty norms, as this type of activism could lead to societal level changes in women's schemas regarding the social implications of their weight and physical appearance.

***Limitations***

There were a number of limitations to the current study. First, the correlational nature of the data collected precludes us from making causal conclusions as to the relationship between interpersonal interactions and body image; nevertheless, analyses do provide evidence for the hypothesized temporal relationships between study variables. It should also be noted that because our dependent variables tended to be correlated with one another, the individual findings we report may not be completely distinct from one another.

Second, although the operationalizations of exposure to "body focused" and "non-body focused" others were face valid and displayed adequate internal consistencies overall, the scale has not been validated, and the factors have only three and two items respectively. Furthermore, the non-body focused measure had only "acceptable to good" reliability across days. Thus, this study should be viewed as a preliminary investigation of the current research questions regarding the influence of different types of social exposure on body image outcomes. Future research should endeavour to measure these forms of social exposure with better-validated items, and should seek to collect objective reports of other people's behavior and attitudes rather than simply participant reports. Similarly, although the single item measure of dietary restraint demonstrated good face and concurrent validity in the current study, it would be preferable to use a longer well-validated measure in future research.

Third, the study only lasted one week. There may be merit to employing longer assessment periods to understand the long-term contribution of exposure to non-body focused and body focused other, and whether within-person variability over a longer time period (e.g., from one month to the next) has similar or different consequences for one's eating and body image. Relatedly, it may be that awareness of different types of exposure may have changed over the course of the study. This interesting question was not examined in the current study, but merits exploration in future research.

Finally, there were limitations associated with using a daily diary methodology, such that participants had to reflect back on an entire day when reporting on their experiences. As such we were unable to assess momentary experiences or to obtain detailed information about each specific interaction/interaction partner. Indeed, it is also possible that on some days, certain participants completed their nightly survey before a relevant social interaction. While the present design is preferable over cross-sectional methods that rely on longer recall windows (e.g., a month), the temporal coupling between social interactions and body image and eating may occur over smaller increments of time. Furthermore, the present study was unable to reveal what types of conversations and/or characteristics of participants' interaction partners contributed to participants' body image and eating – for example, was it the other's dispositional level of body image and eating behavior and/or the body and eating attitudes the other displayed in the current or previous day's interaction? Furthermore, information on the participant's role in the interaction will be important to examine in future research so as to determine whether her body image and eating vary as a function of how active her level of involvement was in body focused interactions (i.e., having initiated the interactions versus merely observing them)." Future research should build on these preliminary findings to examine such questions using

ecological momentary assessment and/or longitudinal dyadic assessment. It will also be important to examine whether demographic variables such as the ethnicity, age and gender of participants and their interaction partners moderate these effects.

***Conclusions***

Although preliminary in nature, the results of this study highlight the importance of developing a broader body of research both experimental and correlational, examining how variation in levels of body/appearance related social exposure influences young women's body image. Results also offer precursory insight into how women may navigate their social context in a way that maximizes adaptive body image outcomes. Given that exposure to non-body focused and body focused others contributed *uniquely* to outcomes, women may experience benefits from trying to interact with more non-body focused individuals even if the frequency of their body focused interactions is high. Furthermore, the benefits of doing so may be readily experienced on that same day and even carry over to the next day. Promoting the inclusion of more non-body focused individuals in one's social sphere may be an integral part of protecting against maladaptive eating and body image patterns and of facilitating adaptive body image and eating.

## Study 2 and Study 3: Interpersonal Displays of Adaptive Body Image: What Type is Most Beneficial to Hear in the Face of a Body Image Threat?

In Study 1, I used a daily diary methodology to establish that interacting with others who display adaptive body image, in the form of intuitive eating and low preoccupation with their body, was related to more adaptive personal body image and eating both within a day and on average over a week. This effect was independent of exposure to others who display maladaptive body image suggesting that exposure to others who relate adaptively to their bodies contributes uniquely and beneficially to one's body image attitudes and behaviours. This was among the first studies to provide empirical support for the idea that being around others with positive body image contributes to college women's ability to maintain an adaptive orientation to one's own body.

Although the findings from Study 1 offer important theoretical and practical implications for understanding the consequences of exposure to adaptive body image, several questions remain unanswered. First, although the daily diary methodology allowed me to establish the directionality of the relationship between adaptive body image displays in others and personal body image, the correlational design made conclusions about causality impossible. Therefore, it is not yet known whether exposure to adaptive body image in others cause better body image in observers. Second, participants in the daily diary study reported on their overall frequency of interactions with non-body focused others at the end of each day. It therefore remains unclear whether the cumulative effect of more frequent interactions with non-body focused others over a day and week confers better body image, or whether there are momentary benefits from this type of social exposure. Third, the items assessing adaptive body image in others were reported on by participants; it is therefore unclear to what extent participants' reports of others reflected actual

characteristics of the others versus subjective perceptions of the others. The fact that participants' body image on a given day did not temporally predict their perceptions of others' body focus suggests that participants' reports of others were not simply reflections of their own personal body image; nevertheless, it would be preferable to study the effects of exposure to others' adaptive body image in a more objective manner. For all of these reasons, I thought it would be useful in a next study to experimentally manipulate displays of body image in others to be able to examine the causal impact of objective exposure to adaptive body image at a momentary level.

Another goal moving forward was to examine how adaptive displays of body image in others may affect individuals when they are in a state of acute body image distress, not just as they go about their day-to-day life. Research shows that individuals tend to cope with state body image distress in a number of maladaptive ways (Cash 2002; Cash et al., 2005; Melnyk et al., 2004) and that increases in momentary state body dissatisfaction predict increases in a number of maladaptive behaviours and states including subsequent engagement in disordered eating and elevated levels of anxiety and depression (Heron & Smyth, 2013; Holmes et al., 2014; Srivastava et al., 2020). As such, I thought it would be important to examine whether the effects of social exposure to adaptive body image would benefit individuals' personal body image in moments of acute body image distress. Therefore, the focus of the next set of studies was on determining the momentary effects of hearing another person cope adaptively with body image distress on participants' reactions to their own body image distress. Because a range of adaptive coping responses in others could conceivably occur and be beneficial, an added objective of the subsequent study was to compare the effects of different coping responses on the observer. Consequently, the second manuscript of the dissertation presents two studies that experimentally

examined whether and what types of adaptive body image displays in others help individuals feel better about their bodies during episodes of acute body image distress.

**Abstract Study 2 & 3**

The present studies examined whether and what types of adaptive body image displays in others help individuals feel better about their bodies during episodes of acute body image distress. Study 2 tested this question by exposing 158 female undergraduates. Participants were first induced to experience state body image distress and subsequently heard a vignette in which a peer described reacting to a distressing body image event with one of three types of adaptive coping reactions to reduce their distress: self-compassion, self-esteem enhancement, or distraction. There was no effect of condition on body image outcomes. However, participants across conditions reported significantly higher body acceptance and body image focused self-compassion after hearing their assigned audio vignette. The goal of Study 3 was to understand the active components of Study 2's coping vignettes that accounted for the beneficial body image outcomes. Using the same methodology, 207 female undergraduates listened to audio clips of an alleged peer a) experiencing body image distress with which she coped adaptively, as in the clips from Study 2, b) expressing body image distress but not displaying adaptive coping or c) denying experiencing body image distress and simply relating well to her body. Those who heard a peer cope adaptively with initial body image distress experienced significantly greater body image related self-compassion and body acceptance, and lower body image distress than those in the other two conditions. Findings are novel in suggesting that in moments of personal body image distress it may be most helpful for women to hear someone else's experience of coping adaptively with their own body image difficulties.

**General Background**

Body image disturbance is so ubiquitous within today's society that it has been termed a "normative discontent" (Rodin et al., 1985). It is related to a variety of maladaptive outcomes including depression, anxiety, and disordered eating (Neumark-Sztainer et al., 2006; Paxton et al., 2006; Stice & Shaw 2002; Wilson et al., 2013) and its causes appear as complex and multifaceted as the construct itself. These causes include external influences such as one's parents, one's peer group and media messages, as well as internal influences including genetic factors and personality traits (Keski‐Rahkonen, et al., 2005; MacNeill et al., 2017; Thompson, Coovert, et al., 1999). Research also shows that although individuals may differ from one another in their average or typical level of body image, there is considerable fluctuation in how people relate to their bodies on a given day and/or in response to situations that threaten or negatively impact their body image (Haimovitz et al., 1993; Kelly & Stephen, 2016). Common body image threats include wearing a bathing suit, seeing a thin model on TV, receiving a critical comment about one's body, and comparing oneself to a thin peer (Groesz et al., 2002; Haimovitz et al., 1993; Herbozo & Thompson, 2006; Lamarche et al., 2012)

Research also suggests that individuals may face frequent situational threats to body image, much more so than situations that convey to the individual that his or her body is accepted. Lamarche et al. (2012) noted in their qualitative study examining body image threats that while women had difficulty recalling or identifying contexts in which they felt comfortable with their bodies, on average, they were readily able to identify contexts in which they experienced body image threats, and that these threats happened as often as multiple times a day.

Research also shows that when faced with body image threats, women tend to cope in ways that may serve to reduce anxiety and self-consciousness in the short term, but that

ultimately perpetuate dysfunctional relationships with their body. Across studies, the most common types of maladaptive coping responses are behavioural avoidance of situations where body weight or shape is salient and appeasement/appearance fixing. Examples of the former include avoiding swimming and clothes shopping; examples of the latter might include stating the intention to, and/or actually engaging in, behaviours to lose weight and/or change one's shape via dieting or exercise. Both avoidance and appearance fixing are associated with decreased body image-related quality of life and increased eating disturbance (Bailey et al., 2014; Cash et al., 2005; Lamarche et al., 2012; Smith-Jackson et al., 2011). As such, it appears that individuals encounter a variety of body image threats in their daily lives, and often employ coping strategies that maintain or exacerbate body image dysfunction, precluding the development of an adaptive and accepting relationship with their body. Thus, it is important to understand how and what types of variables may be protective for one's body image and facilitate more adaptive coping responses in the face of exposure to negative body image information and experiences.

One class of protective factors may be interpersonal. There is a plethora of research indicating that individuals' body image is affected by the body image of those around them. Correlational studies show that mothers' body dissatisfaction and disordered eating are correlated with their daughters', (Cooley et al., 2008; Kichler & Crowther, 2001; Pike & Rodin, 1991; van den Berg et al., 2010) and body image disturbance and disordered eating are correlated within friend groups of teenage girls (Lieberman et al., 2001; Miething et al., 2018; Paxton et al., 1999; Webb & Zimmer-Gembeck, 2015). Even romantic partners tend to share similar levels of body image dissatisfaction (Oh & Damhorst, 2009). Although these studies were correlational and typically assessed trait level body image, there is additional research indicating that the body

image attitudes and behaviours of others may have an impact on one's body image in a given moment. Experimental studies show that simply hearing others engaging in fat talk leads to a subsequent decrease in college women's body satisfaction (Stice et al., 2003) and qualitative studies suggest that being around others who tend to be self-critical of their bodies makes it more difficult for college women to feel positively about their own bodies (Wood-Barcalow et al., 2010).

Although much of the research on interpersonal body image influences has focused on how others' maladaptive body image may lead to negative outcomes for individuals' own body image (i.e., increased body dissatisfaction), research increasingly suggests that adaptive body image attitudes and behaviours in others may influence individuals' own body image within a given day or situation. Qualitative studies have suggested that being around other women who display confidence, appreciation, and acceptance of their body serves as motivation to cultivate and maintain one's own positive body image (Wood-Barcalow et al., 2010; Mafrici, 2014) Findings from Study 1 of my dissertation showed that college women who, on a given day, interacted more frequently than usual with others who were not focused on their bodies and who ate intuitively (according to hunger and fullness signals and cravings) also had better body image and eating on that day (Miller et al., 2019). Finally, an experimental study found that participants who read a vignette of a person who responded to a peer's fat talk with a challenging statement inspired by feminist theory (e.g., "I think feeling healthy and happy with who I am as a person is so much more important than focusing on how I look") reported being less likely to subsequently engage in fat talk than those who heard a colluding response (i.e., it's stressful because a lot of the girls who go to spinning class are super skinny. I wish I could look like that! But all my weight goes to my thighs and butt!" (Ambwami et al., 2017). However, this study did not

directly assess the impact of hearing a challenging response (i.e., a response that reflects adaptive body image) on the listener's body image, which is an important gap in the literature.

In sum, there is preliminary evidence suggesting that how individuals relate to their bodies may be influenced by how those around them relate to their bodies, and that this influence can be positive and/or negative depending on the type of body image relating others are displaying. Although the mechanisms by which this body image contagion might occur have not yet been tested, literature on social cognition and learning suggests that processes of vicarious reinforcement may be at play.

***How Might Body Image Attitudes and Behaviours be Contagious?***

Social Learning Theory suggests that the likelihood of emulating the attitudes, behaviours, and emotional responses that others display is predicated on whether those displays yield reinforcing (i.e., positive) outcomes (Bandura, 1977). This theory could explain how both positive and negative body image may be transferable across individuals. Although it may seem counter-intuitive that displays of negative body image could result in reinforcing consequences, the current cultural climate that glorifies thinness and weight loss efforts may in fact provide social reinforcement for negative body image. Indeed, there is research to suggest that fat talk may function as a form of social bonding (Nichter, 2000); furthermore, efforts to engage in weight loss behaviours and restrictive eating are often praised by others (Wertheim et al., 1999). Conversely, there are known benefits associated with possessing adaptive body image, independent of whether one's body resembles society's thin ideal; these include being able to eat intuitively, having more satisfying sexual experiences, and being able to engage in and enjoy valued pursuits and activities independent of one's body image (Avalos & Tylka, 2006; Robbins & Reissing, 2018; Sandoz et al., 2013). Observing these "rewards" tied to body acceptance and

appreciation may be reinforcing for the observer. Qualitative research has suggested as much, citing the sense of positivity, confidence, and interpersonal acumen of body positive others' motivation to relate more positively to their body (Wood-Barcalow et al., 2010). Given the frequency of body image threats, and prevalence of negative body image attitudes and behaviour in today's society, Social Learning Theory suggests that although displays of negative body image attitudes and behaviours by others pose a threat to a given individual's body image, the interpersonal domain may also offer potential in being able to mitigate individuals' maladaptive responses to negative body image situations. That is, there may be certain types of body image attitudes and behaviours that individuals witness others display in the face of body image threats, and, the nature of these responses may have an impact on how adaptively versus maladaptively individuals cope with their own body image threats.

### *Study Objectives*

The present research comprises two studies that sought to examine whether: 1) individuals experiencing a distressing body image situation can derive body image-related benefits – both decreases in body image dysfunction and increases in positive body image – from observing a peer cope adaptively with a body image threat; and 2) whether certain forms of adaptive coping are more beneficial to witness than others.

## Study 2 Introduction

One type of self-relating that has been shown to be protective in the face of body image distress is self-compassion. Self-compassion represents a motivation to be sensitive to, and alleviate, one's own suffering (Dalai Lama, 1995; Gilbert, 2014). Self-compassion has typically been operationally defined as an orientation towards one's own suffering that is kind rather than judgemental, mindful and objective rather than driven by overwhelming emotion, and that

recognizes suffering as a shared human experience rather than feeling alone and isolated by ones' hardships (Neff, 2003). Much work has been done to distinguish self-compassion from self-esteem. Self-esteem refers to how positively one evaluates oneself, and these value judgements are typically derived from comparisons to internal and/or external standards (Crocker & Wolfe, 2001; Rosenberg, 1965). Importantly, self-compassion is not predicated on meeting certain standards, and in fact may be most helpful in times when one falls short of those standards (Leary et al., 2007). Self-compassion has been uniquely associated with a variety of positive mental health outcomes using both correlational and experimental methodology, including greater happiness, optimism, life satisfaction, adaptive coping, and general psychological well being (Neff, 2003; Neff et al., 2005; Neff et al., 2007; Neff & Vonk, 2009). Furthermore, it is negatively correlated with depression, anxiety, and other psychopathology (Barnard & Curry, 2011; MacBeth & Gumley, 2012; Neff, 2003).

Research in the area of self-compassion and body image has grown exponentially in recent years and with good reason. A number of correlational studies shows that a greater openness to developing self-compassion is associated with greater symptom improvement in eating disorder treatment (Kelly et al., 2013); that self-compassion predicts less eating guilt, weight and shape concern in non-clinical samples (Kelly, Vimalakanthan, & Carter, 2014; Wasylkiw et al., 2012); and that self-compassion attenuates the relationship between high BMI and eating pathology (Kelly, Vimalakanthan, & Miller, 2014). Similarly, preliminary clinical research on self-compassion interventions shows promising results, with eating disorder patients who received self-compassion-based interventions not only exhibiting greater increases in self-compassion, but also greater reductions in global eating pathology than comparison treatments (Kelly & Carter, 2015; Kelly et al., 2017). Additional research demonstrates the efficacy of self-

compassion interventions in non-clinical populations for improving health related behaviours and body image (Rahimi-Ardabili et al., 2018; Turk & Waller, 2020) In addition to alleviating body image dysfunction, the tendency to be self-compassionate is associated with indicators of adaptive body image such as greater body image flexibility, which is the ability to accept and tolerate negative body image related thoughts and feelings without allowing them to have undue impact on one's life, body appreciation, and intuitive eating, (Kelly et al., 2014; Albertson et al., 2015; Augustus-Horvath & Tylka, 2011; Avalos & Tylka, 2006; Oh et al., 2012).

Although it has yet to be examined within the domain of body image, there is preliminary evidence to suggest that displays of self-compassion may be transferrable across individuals. Miller and Kelly (2020) found that individuals who heard a self-compassionate reaction to academic distress, as compared to a neutral one, subsequently felt more self-compassionate, and displayed more objective self-compassion when thinking about a personally relevant academic struggle. Given that having a self-compassionate attitude may yield less dysfunctional and more adaptive body image, it is possible that witnessing another person experience these body image benefits from being self-compassionate may encourage the observer to adopt a similarly self-compassionate attitude when coping with their own body image distress. Thus, experimentally examining whether self-compassionate coping is contagious in the domain of body image could hold important implications for helping individuals relate to their bodies in a more adaptive way and better cope with body image threats they may encounter on a daily basis.

***Study Objectives and Hypotheses***

The primary objective of this study was to examine whether exposure to another person who displays self-compassion vis-à-vis a body image threat would result in individuals experiencing more adaptive and fewer maladaptive body image attitudes, when considering a

personal body image threat. A secondary objective was to characterize the unique effect of exposure to another person's self-compassion beyond simply exposure to another person's positive self-relating in general. It is typical within the self-compassion literature to include a self-esteem condition when attempting to empirically isolate the unique effects of self-compassion (e.g., Brienes & Chen, 2012; Seekis et al., 2017). As such, we included a condition in which individuals heard a self-esteem enhancing reaction to a body image threat. We also included a control condition in which participants heard someone cope with a body image threat by distracting themselves, which we considered to be a more emotionally neutral coping strategy. This condition would allow us to ensure that any effects of the self-compassion and self-esteem conditions were not due to simply hearing someone cope with a body image threat, which was a component of both conditions.

Our hypotheses were that after recalling a situation in which their personal body image was threatened (i.e., a situation that elicited discomfort, doubt, dissatisfaction or preoccupation with their own body image), participants who hear another person react self-compassionately to their own body image threat, as compared to those who hear someone react with self-esteem enhancement or distraction, would: (Hypothesis 1) display greater state self-compassion vis-à-vis their own body image distress (termed body image-focused state self-compassion); (Hypothesis 2) report greater state body acceptance; and (Hypothesis 3) report lower levels of state body image distress.

## Methods

### *Participants and Overview of Procedure*

Participants were female undergraduate students recruited from a research participant pool at a large Canadian university. Research shows that feeling similar to or identifying with

some characteristic of another individual can increase the likelihood of emotional contagion (Goldstein & Cialdini, 2007), thus the current study was restricted to women. We chose women rather than men because research shows that women tend to experience greater body image disturbance than men (Esnaola et al., 2010) and also tend to be less self-compassionate than men (Yarnell et al., 2015). Thus, limiting the study to women not only allowed us to control for these gender differences in self-compassion and body image but, any potential benefits to participant's self-compassion or body image resulting from partaking in the study may be more crucial and beneficial for women.

We wanted participants to be unaware of the true purpose of the study as many aspects of interpersonal contagion processes happen inferentially and automatically (for review, see Parkinson, 2011); for example, when people hear a friend engage in fat talk, they may not be aware that the fat talk is increasing their own body image dissatisfaction and distress. Thus, partial disclosure was required, and the study was described more broadly as an investigation of "Body image, thoughts and feelings." Participants were told that the purpose of the study was to examine how university students cope with body image struggles, and that they would be asked about their own body image as well as their thoughts on how other students cope with negative body image. Participants signed up for their in-lab timeslot (Part 2) in which the experimental manipulation would take place and received a link to complete Part 1 of the study online at least 3 days before this scheduled session. Part 1 consisted of self-report measures assessing trait variables, which were not the focus of the current analyses. Part 2 was completed in lab. Participants sat at a computer where they listened to one of three randomly assigned audio clips that contained the experimental manipulation. This part of the study was done in lab so that a research assistant could be present to verify that participants were able to listen to the audio clip

free from distraction or technological issues that might prevent the audio clip from playing. Compensation was one credit towards a psychology course for completing both parts of the study.

**Participants.** The initial sample consisted of 216 participants, but of these, 58 did not complete the second session, which was the basis for the current analyses. It can be assumed that attrition was not a function of experimental condition, as the experimental portion of the study did not take place until the second session. The final sample consisted of 158 female undergraduates with a mean age of 20.14 (*SD*=2.85). Ethnic composition was 41.9 % white/Caucasian, 45.8 % Asian, 2.6 % Middle Eastern, 3.2 % West Indian/Caribbean, 5.8 % black/African, and 0.6 % Hispanic. In order to ensure that there were no differences between completers and non-completers, an independent samples *t*-tests was run examining scores on trait body image, which we considered to be the most relevant trait variable assessed. Results confirmed that there were no differences in trait body image between those who completed both parts of the study and those who dropped out after the first part (*p*=.60)

***Measures***

**Body Image-Focused Self-Compassion.** Since body-related self-compassion was the main outcome variable of interest, we included a modified version of the SCS which was originally adapted by Breines and Chen (2013) to assess state-level attitudes towards a specific personal struggle. Their state SCS uses the same 5-point scale as the original SCS but consists of 16 items; it excludes SCS items that were not easily altered to assess momentary self-attitudes in the context of a specific distressing situation. We modified this scale slightly to orient participants to their recalled distressing body image situation. Sample items were: "A lot of people have negative body image experiences" and "I am trying to be kind and reassuring to

myself." Participants completed this scale immediately after recall and again after hearing their randomly assigned audio clip. Negative items were reverse-scored and then averaged with the rest of the items to create a total Body image-focused self-compassion score. Cronbach's alpha was .88 in the current sample.

**State Body Image and Affect.** State body image and affect were assessed using a series of visual analog scales (VAS). VAS are 100mm lines and participants may slide a marker anywhere along the line to indicate their response to a question or a statement, with item-specific verbal anchors at both 0mm and 100mm. Given the brevity of the audio clips, we felt that using VAS items would allow for a more immediate and accurate assessment of participants' momentary affective reactions, as well as increase compliance and minimize missing data. Indeed, research shows that VAS measures yield high compliance and may in fact be a more reliable and valid method of repeatedly measuring small but significant changes in acute mood states than verbal rating scales (Ahearn, 1997; Folstein & Luria, 1973; Kellner, 1971, 1972). Research has also shown that a single-item VAS measure is sufficient to assess a given mood state (Davey et al., 2007). Given that the aim of the experiment was to capture the momentary effects of exposure to others' coping reactions, we felt that including full-scale verbal measures of all three dependent variables at three different time points would be too time-consuming and taxing for participants and thus compromise the accuracy of their self-report. Using full scales might also contaminate implicit cognitive-affective reactions; for example, by asking participants to reflect on multiple items assessing body image, verbal rating scales may elicit conscious and explicit reflection on their body shame, which could worsen/intensify the feeling, or they could attempt to modify their feelings to feel better.

For the reasons reviewed above, we chose not to administer the validated Body Image States Scale (Cash et al., 2002) as a measure of state body image. The items of this scale are quite verbose (e.g., "Right now I feel I look a great deal better than the average person looks") and would be difficult to report on accurately on repeated occasions so close in time. Instead, we created VAS items that were face valid and amendable to quickly capturing momentary body image and changes therein. For all items, participants were asked to indicate their current thoughts and feelings towards their body by sliding a marker on the visual scale from 0 (not at all) to 100 (extremely). Given the research showing that positive and negative body image are distinct, we assessed these constructs separately. Participants were instructed to "slide the visual indicators to indicate how you are currently feeling right now."

***State Body Acceptance***. State body acceptance was measured using a single-item VAS that asked participants to rate their momentary feeling of body acceptance from *"not at all"* to *"extremely"*.

***State Body Image Distress.*** State body image distress was measured using an aggregate of 4 VAS items with the anchor points: "not at all/extremely *upset* with my body", "not at all/extremely *dissatisfied* with my body", " not at all/extremely *distressed* about my body", and "not at all/extremely *motivated to hide parts of my body*." Cronbach's alpha was .92 in the current sample.

***Positive and Negative Affect***. Six VAS items taken from the Positive and Negative Affect Schedule (Watson et al., 1988) assessed positive and negative affect before and after recalling a personally distressing body image event to confirm the participant was in fact negatively emotionally impacted by the recollection of their negative body image situation. Negative affect (NA) was computed by averaging scores on the "upset" and "distressed" VAS

items, and positive affect (PA) was computed by averaging scores on the "calm", "content", "happy" and "proud" VAS items. Cronbach's alphas for NA and PA were .73 and .88 respectively, demonstrating acceptable internal consistency.

### *Participant Engagement in the Study*

**Engagement and Attention.** Participant engagement was measured by asking participants to use a single item VAS scale to respond to the question "how engaged and focused were you when completing this study, with anchor points of "not at all focused" and "extremely focused"

**Distraction.** Participant attention during the audio clip (experimental manipulation) was measured in two ways. The first was a single item VAS measure asking participants to respond to the question "How much attention did you pay during the audio clip?" with anchor points from "none" (0) to "a lot" (100). Secondly, given that participants may have been partially listening we asked participants to indicate what else they were doing while listening to the audio clip as a second metric for assessing distractibility by choosing amongst the following options: Checking email, checking Facebook, surfing the internet, texting, watching TV/movies, doing homework, nothing, "other" (with the option to specify what this other activity was).

### *Procedure*

During the laboratory session, participants first reported on their momentary PA and NA (Time 1), then they underwent a body image distress induction. Recall tasks have previously been used successfully to induce negative mood and body image distress (Fitzpatrick et al., 2019; Ironson et al., 1992; Segal et al., 1999). As such, participants were asked to recall a time when they felt self-conscious or negative about their body including recreating as vividly as possible the thoughts feelings and reactions they experienced at the time. Participants then reported on

their PA and NA again (Time 2). This would allow us to assess whether recalling the negative body image event was in fact distressing. Then, relevant outcome variables (body image-focused self-compassion, body acceptance, body image distress) were measured at Time 2 (pre-manipulation). Participants were then informed that they would be asked to evaluate how other people cope with body image threats. To increase the study's ecological validity and more closely approximate what might happen in one's daily social interactions, we chose not to disclose that the audio clips were hypothetical scenarios. We deceived participants to believe that in a previous stage of the study, we recorded participants describing a time when their body image was threatened and their reaction to the situation. We explained that we had obtained consent from one of these participants to use their recording in the current stage of the study, and asked participants to pay close attention to the clip as they would be asked questions about it afterwards.

Participants were then randomly assigned to listen to one of three audio clips of someone describing a situation where their own body image was threatened and then sharing their reaction to this situation. After hearing the audio clip (Time 3, post-manipulation), participants again completed the state SCS and the relevant VAS outcome measures. Finally, participants completed measures of attention and engagement and were provided with an oral debriefing by the researcher that explained the true purpose of the study and why partial disclosure and deception were necessary.

***Experimental Manipulation***

The audio clips all followed the same structure and were approximately 3 minutes and 30 seconds in length. The clips were designed by the researchers and were intended to be face valid and theoretically consistent with literature on the components of self-compassion and self-

esteem enhancement, and body image. We further ensured that we depicted the positive cognitive and affective outcomes that have been empirically linked with each respective construct, as described below. We revised and edited the clips numerous times based on feedback from other researchers with expertise in self-compassion and body image, and based on ratings of the audio clips provided by five students with no familiarity with this area of research. Each clip began with the same female voice describing a scenario where she had recently returned home from her first semester away at college, and at a family dinner, her grandfather made a thoughtless remark insinuating that she had gained weight since being away and was eating too much at dinner. The clips then departed from one another in describing how the individual felt upon hearing the remarks and how she coped:

**Self-Compassion Condition.** In this clip, the person conveyed compassion for her distress, with a focus on trying to being caring toward herself and not ruminating on the past. We tried to reflect coping reactions that have been shown in past research to be related to self-compassion such as body image acceptance and flexibility (Kelly, Vimalakanthan, & Miller, 2014), health-promoting behaviour intentions (Sirois, 2015), intrinsic motivation to exercise (Magnus et al., 2010), and intuitive eating (Schoenefeld & Webb, 2013), e.g.,

> "I reminded myself that it's understandable to feel insecure or hurt when someone makes that kind of comment… I realized I can't go back and change my eating from the last couple months and I am going to accept my weight given that fact… rather than beat myself up and feel lousy about my weight gain, I'd start trying to incorporate more veggies into my diet and do active things that I have always enjoyed but kind of fell by the wayside in the transition to university, like hiking and bike riding. I figure, as long as I focus on health as my long-term goal, my weight will fall wherever is naturally best for

me… I even bought myself a couple new pairs of jeans because it's important to me to feel comfortable regardless of whether I gain or lose weight…".

**Self-Esteem Boosting Condition**. Previous research indicates that reactions to self-esteem threats often involve compensatory self-enhancement, defensiveness and downward social comparisons (for a review, see Crocker and Park (2004)). Accordingly, this clip was designed to reflect these tendencies, presenting a reaction in which the person tried to defend her self-esteem and restore her feelings of self-worth, e.g.,

"I also couldn't help but notice that my grandfather isn't exactly slim himself, so he is really in no position to be commenting on other people's weight. …I also reminded myself that there are many people, even some of my friends who are bigger than I am and a lot of them try way harder to diet and workout than I do so I obviously have a pretty good metabolism. …I decided to go out and buy some new clothes that accentuate my good features…I think my grandfather was just being overly critical…I still get hit on at the bar all the time".

**Distraction Control Condition.** This clip presented a reaction in which the actor distracted herself from her negative feelings about her body in the situation, e.g.,

"I figured if I can take my mind off of it I will probably feel better…It worked pretty well, I found a quiet corner and by the time I had watched two or three episodes …my grandfather's comment was no longer at the front of my mind."

## Results

### *Analytic Strategy*

We conducted all analyses in IBM SPSS Statistics 22. Hypotheses were tested using mixed factorial analyses of covariance (ANCOVAs) in which the main independent variable was

condition (i.e., hearing a self-compassionate, self-esteem preserving, or neutral control audio clip). In order to assess the relative effect of the self-compassion condition on outcome variables (state body-related self-compassion, state body image distress, and state body acceptance), we performed three ANCOVAs in which post-clip levels of the relevant outcome variable served as the dependent variables with pre-clip levels of that variable entered as a covariate. Raw pre-clip scores were used to allow for interpretation of the intercept as a measure of mean change over time in the outcome variables from pre to post-clip.

### *Preliminary Analyses*

**Descriptive Statistics and Correlations.** Normality was assessed within each condition for each dependent variable. All outcome variables were normally distributed with the exception of state body image focused self-compassion within the "Control" condition, which demonstrated negative skew. Given the issues of compromised accuracy and interpretation associated with transforming data, Field (2013) recommends against using transformations unless correcting for a lack of linearity. Given that Levenes test was not significant for any of the outcome variables, we chose not to transform the data and instead rely on robust procedures. There were nine participants who demonstrated outlying values across the dependent variables as modeled by Tukeys boxplots. Upon examination of the raw scores, these appeared to be legitimate values obtained from participants. Excluding these participants from the analyses did not change the pattern of results, thus we chose to retain them. Table 4 presents Pearson zero order correlation coefficients between all study variables at pre-manipulation, as well as for positive and negative affect before and after recalling a personally negative body image event. As expected positive and negative affect after recalling a negative body image situation showed moderate-small significant correlations with the main outcome variables at pre-manipulation. In terms of the

main outcome variables, correlations were in the expected directions such that body image distress correlated positively with negative affect and negatively with positive affect, body image focused self-compassion, and body acceptance. All outcome variables correlated significantly and strongly with each other at pre-manipulation.

**Table 4**

*Zero-Order Pearson Correlations Between Study 2 Variables*

| | Pre-recall NA | Pre-recall PA | Post-recall PA | Post-recall NA | Pre-manipulation BI Distress | Pre-manipulation Self Compassion | Pre-manipulation Body Acceptance |
|---|---|---|---|---|---|---|---|
| Pre-recall NA | - | | | | | | |
| Pre-recall PA | .36** | - | | | | | |
| Post-recall PA | .16 | .70** | - | | | | |
| Post-recall NA | .25** | .33** | .54** | - | | | |
| Pre-manipulation BI Distress | .23* | .45** | .67** | .62** | - | | |
| Pre-manipulation Self Compassion | .29** | .50** | .61** | .57** | -.75** | - | |
| Pre-manipulation Body Acceptance | .30** | .54** | .67** | .37** | -.67** | .62** | - |

$^{t}$ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

**Baseline Differences Between Conditions.** Table 5 presents means and standard deviations for all variables at baseline/pre-manipulation by condition. As seen in this table, one-way ANOVAs revealed that there were no significant differences in levels of pre-manipulation body image-focused self-compassion, body image distress or body acceptance across conditions, and no difference in pre-recall NA, or PA across conditions.

**Pre- and Post-Recall Affect.** Because the experimental manipulation was predicated on participants recalling a personal body image related situation that was distressing, we wanted to verify that the recall portion of the manipulation worked as intended to increase distress and lower positive affect. We conducted a repeated measures ANOVA to examine changes in participant's affect from pre to post recall using the composite measures of PA and NA described in the measures section. There was a significant effect of time on affect; NA increased significantly across conditions from pre- to-post recall ($F$ (1, 118) = 27.88, $p < .001$, $\eta^2_p = .19$) and PA decreased significantly across conditions from pre to post recall ($F$ (1,149) = 71.57, $p < .001$, $\eta^2_p = .32$). Therefore, the recall induction seemed to sufficiently engage participants' emotions in the way it was intended. Furthermore, one-way ANOVAs confirmed that there was no effect of condition on post-recall levels of PA ($F$(2, 147) =.68, $p = .51$) or NA $F$(2, 144) = .18, $p = .84$), revealing that participants across conditions did not differ from one another in their affect levels immediately before the experimental manipulation took place.

**Table 5**

*Means (and Standard Deviations) of Study 2 Variables at Baseline*

| | Self-compassion | Self-esteem | Control | Effect of Condition |
|---|---|---|---|---|
| Pre-manipulation NA [a] | 44.43 (26.29) | 41.57 (23.25) | 43.61 (22.67) | $F$(2, 144)=0.18, $p$=.84 |
| Pre-manipulation PA [b] | 51.11(22.61) | 55.35 (22.32) | 55.75 (20.98) | $F$(2, 147)=0.68, $p$=.51 |
| Pre-manipulation BI Self-Compassion [c] | 3.43 (0.72) | 3.61 (0.68) | 3.60 (0.57) | $F$(2, 158)=1.12, $p$=.33 |
| Pre-manipulation Body Acceptance [d] | 49.60 (29.63) | 51.29 (27.34) | 51.76 (26.96) | $F$(2, 153)=0.09, $p$=.92 |
| Pre-manipulation BI Distress [e] | 54.60 (26.96) | 52.60 (27.91) | 48.75 (25.10) | $F$(2, 143)=0.60, $p$=.55 |

[a]n=161, [b]n=150, [c]n=112, [d]n=156 [e]n=146

**Engagement and Attention.** The average rating of self-reported engagement in the study was 83 out of 100 ($SD$ = 15.96) and a one-way ANOVA revealed that there were no differences

in participant engagement across conditions, $F(2, 156)= 1.74$, $p = 1.80$. The mean rating of self-reported attention paid during the audio clip was 90 out of 100 ($SD = 14.63$) and a one-way ANOVA again revealed no differences across conditions, $F(2, 156) = 1.74$, $p = 1.78$. Thus, it appears that participants felt highly engaged when completing study tasks and believed that they paid very close attention to their assigned audio clip. Fifteen participants reported being distracted during the audio clip as evidenced by their endorsement of one or more behaviours from our distraction measure (texting, mind wandering etc.); however, the pattern of results in central analyses remained the same when these individuals' data were excluded from analyses and so we chose to retain them.

***Main Analyses***

**Body Image-Focused State Self-Compassion (Hypothesis 1).** Results from the first ANCOVA indicated that when controlling for pre-clip body image-focused self-compassion, there was no effect of condition on post-clip body image –focused state self-compassion ($F$ (2, 153) = .26, $p = .78$), contrary to hypothesis 1. The test of the intercept revealed that there was a significant change in body image-focused self-compassion across conditions from pre to post audio clip, $t(153) = 7.93$, $p < .001$, with participants' scores on the modified state SCS increasing by an average of 1.23 out of 5 ($SE = 0.16$).

**Body Acceptance (Hypothesis 2).** The second ANCOVA indicated that when controlling for pre-clip levels of body acceptance, there was no effect of condition on post-clip body acceptance ($F(2, 150) = 0.80$, $p = .45$), contrary to hypothesis 2. The test of the intercept revealed a significant effect of time on body acceptance such across all conditions, there was a significant increase in levels of body acceptance from pre to post clip, $t(150) = 9.56$, $p < .001$, with scores increasing by an average of 32.65 out of 100 ($SE = 3.42$).

**Body Image Distress (Hypothesis 3).** Results from the third ANCOVA indicated that controlling for pre-clip levels of body image distress, there was no significant effect of condition on post-clip levels of body image distress ($F(2, 137) = 0.95$, $p = .39$), contrary to hypothesis 2. Furthermore, the test of the intercept indicated that across conditions, participants levels of body image distress did not change significantly from pre-to post audio clip, $t(137) = 0.66$, $p = .51$, with scores increasing by an average of 2.09 out of 100 ($SE = 3.15$).

### *Summary of Results*

In summary, there was no effect of condition on any of the outcome variables, contrary to our hypotheses. However, participants reported significantly higher body acceptance and body image focused self-compassion after hearing their assigned audio clip, regardless of whether they heard a self-compassionate, self-esteem enhancing or distracting coping reaction to body image distress. Participants' level of body image distress, however, did not change significantly from before to after hearing the audio clip.

## Discussion

The present study examined whether hearing someone cope with a body image threat self-compassionately would facilitate adaptive coping with a recalled personal body image threat. We hypothesized that exposure to a self-compassionate response would yield greater state body image-focused self-compassion and body acceptance, and less body image distress, than exposure to a self-esteem enhancing response or a distraction-based response. However, contrary to this prediction, there was no effect of experimental condition on outcomes. Rather, across all conditions, participants experienced an increase in body image-focused self-compassion and state body acceptance from the time they recalled their distressing body image situation to after they heard the reaction of the individual in their assigned audio clip.

These changes over time could be simply due to the passage of time from participants' recalled event and not due the audio clips they heard. Unfortunately, the study did not contain a pure control condition that only involved the passage of time as our primary interest was in the self-compassionate coping condition and disentangling its effects from other positive coping reactions. Furthermore, a "pure" control condition without a body image coping response would have required participants to sit and do nothing for about 3 minutes which would have been difficult to ask of them without a clear rationale. Furthermore, the rationale presented across the other conditions was that we were interested in reactions to hearing other students' coping reactions. A different rationale would therefore have been needed to be provided in such a pure control condition, thereby making this condition different from the other ones in two ways (i.e., presence/absence of a coping reaction and rationale) and limiting the conclusions that could be drawn. Nevertheless, future research should examine the possibility that body-related self-compassion and body acceptance naturally increase as time passes following the recall of a personal body image threat.

Another explanation for the positive changes participants experienced across study conditions is that the content in each of the three coping reactions was therapeutic for the listener. The fact that the conditions did not differ from one another in the outcomes they yielded suggests that features shared by the three audio clips may have produced the observed changes in body-related self-compassion and body acceptance. In considering the content of the three clips, they all contained two general components – a description of a personally distressing body image situation and adaptive behaviour via the choice to use a coping strategy in response to body image distress rather than ruminating and remaining upset. Therefore, it could be that the

benefits participants experienced from pre to post clip were due to 1) the first component alone, 2) the second component alone, or 3) a combination of the first and second component.

Regarding the first possible explanation, it could be that hearing that a peer experienced a situation in which their body image was threatened highlighted the "common humanity" of body image struggles, making the listeners realize that they are not alone and that such experiences are (unfortunately) common for women. As such, hearing the clips in the study may have lowered any sense participants had that there is something inherently wrong with them and their bodies, allowing them to view their own body image struggles with less shame and more self-compassion and acceptance. Indeed, a qualitative study by Berry et al. (2010) found that women who self-identified as having become more self-compassionate towards their bodies noted that observing other women in their life struggle with body image was a catalyst for distress reduction and body acceptance.

A second possibility exists – in all three clips, the actress did something that helped her feel less distressed, happier, and better about her body. Therefore, independent of the preceding body image stressor discussed, it may be that hearing a peer relate to herself and her body in an adaptive way promoted positive outcomes in the listener independent of the initial distress that preceded this way of relating. Qualitative evidence suggests that for participants who self-identified as having developed positive body image, simply seeing the confidence and positivity that other women with positive body image exuded was motivation for they themselves to try and cultivate positive body image (Wood-Barcalow et al., 2010). Furthermore, participants identified that surrounding themselves with others who demonstrate positive body image was important for maintaining their own adaptive body-relating (Wood-Barcalow et al., 2010).

Finally, a third possibility is that it may be the combination of hearing someone else struggle with body image *and* cope with that body image struggle adaptively to reduce their distress (regardless of the specific type of positive coping strategy used) that accounted for the improved body image self-compassion and body acceptance observed across conditions in the study. Research in social and educational psychology suggests that when learning new skills, behaviours, or emotional responses, it is most beneficial to observe the exact ways in which another individual who is struggling in the same domain thought and behaved to overcome their struggle. (Sarason, 1975; Schunk et al., 1987; Meichenbaum, 1971)

Given that there is very little research examining how others' body image related attitudes and behaviours may affect one's ability to cope with momentary states of body image distress, I sought to determine which of these three aforementioned possibilities best accounts for the Study 2 results.

**Introduction Study 3**

The purpose of the current study was to build on the findings from Study 2 to determine which specific component(s) of hearing another person cope adaptively with body image distress is/are most beneficial to the listener. All three conditions in Study 2 contained both a description of body image distress and adaptive coping, so we retained the self-compassion condition only, given it was of greatest initial interest to us. We then added two additional conditions containing a description of body image distress only or a description of adaptive body image relating only.

Hearing a peer describe a distressing body image experience, even without the presence of adaptive coping, may provide a sense of "common humanity", which is a sense of connection to others tied to the knowledge that one is not alone in one's suffering (Neff, 2003). Alternatively, witnessing someone display adaptive body image attitudes, including a lack of

body image distress and high positive affect, may be beneficial to a listener by modeling that it is both possible and "okay" to relate to one's body positively even in today's society of pervasive body dissatisfaction. Finally, it may be that hearing a peer both discussing personal experiences with body image distress *and* subsequently trying to relate to her body in an adaptive, positive way offer benefit.

Social psychology research on observational learning may help to inform hypotheses about which of these three body image displays may be most helpful and why. Studies have found that viewing "coping" peer exemplars who initially struggle to perform a certain behaviour or attitude but verbalize coping statements and their learning process is more helpful for the observer's skill acquisition and self-efficacy than observing a "mastery" peer exemplar (Sarason, 1975; Schunk, 1987, 1995; Schunk et al., 1987). Rather than displaying any initial difficulty, the mastery peer performs the target skill perfectly from the start and verbalizes statements reflecting confidence, high ability and low task difficulty. The theoretical mechanisms underpinning this finding are that similarity increases the likelihood of observational learning; thus, if the exemplar displays a similar initial struggle as the observer and displays sequential steps forward in the target behaviour, the observer will experience an increased sense of self-efficacy, i.e., "if this person who was struggling as much as me can learn to do it, so can I." Such an exemplar also teaches the observer the steps necessary to achieve the skill in question.

The benefits of observing a coping peer have emerged across a variety of learning targets including solving math problems and decreasing phobias (Meichenbaum, 1971; Schunk, 1995; Schunk et al.,1987). Sarason (1975) found that when participants with high test anxiety were exposed to a coping confederate who described experiencing test anxiety, as well as adaptive ways of coping with it, those participants subsequently performed better on a test of performance

than those who were exposed to either a mastery confederate who described experiencing no test anxiety, or a "no coping" confederate who endorsed and described the thoughts and feelings associated with her test anxiety, but did not describe using any coping skills. Importantly, in this study participants were not explicitly told to attend to or emulate the confederate, but still showed differing reactions to the confederates. Like test anxiety, body image distress may be amenable to the same type of implicit socially learned coping processes.

Based on these social learning findings, we hypothesized (Hypothesis 1) that hearing a peer describe her experience with body image distress and then describe how she coped adaptively with her distress using self-compassion (Adaptive Body Coping condition) would yield significantly better outcomes than hearing a peer simply share her body image distress without any coping response (Body Distressed condition) (Hypothesis 1a) or simply describe her experiences with positive body image (Body Contented) (Hypothesis 1b). We did not have any a priori hypotheses regarding whether these latter two experimental conditions would yield different outcomes from one another but examined differences on an exploratory basis.

## Methods

### *Participants and Overview of the Procedure*

The procedure mirrored that of Study 2 in that participants signed up for their in-lab timeslot (Part 2) and received a link to complete Part 1 of the study online at least three days before this scheduled session. Part 1 consisted of self-report measures assessing trait variables, which were not the focus of the current analyses. Consistent with the rationale provided in Study 2, part 2 was completed in lab and relevant state measures were assessed in the same order as in Study 2 starting with baseline measures of outcome variables followed by the negative body

image event recall, a second measurement of state outcome variables, the experimental manipulation, and a post-manipulation measure of outcome variables.

**Participants.** Participants were 207 female undergraduate students recruited from the same participant pool as Study 1. Participants were compensated one bonus credit towards one of their psychology courses. Participation was restricted to women for the same reasons cited in Study 2. The initial sample consisted of 273 participants; however, of those, 66 did not attend the mandatory laboratory session in which the experimental manipulation occurred. Thus the final sample consisted of 207 females with a mean age of 20.31 (SD=2.15) who were 46.8% Caucasian, 3.5% Black/African, 1.0% Hispanic, 37.3% Asian, 5.5% Middle Eastern, 3.5% West Indian/Caribbean, 2.5% Other (not listed). In order to ensure that there were no differences between completers and non-completers in terms of trait body image, an independent samples t-tests was run. Results confirmed that there were no differences in trait body image between those who completed both parts of the study and those who dropped out after the first part ($p$=.70)

***Measures***

**Positive and Negative Affect.** PA and NA were assessed pre- and post-recall using the same aggregate VAS items described in Study 2. The Cronbach's alpha was .81 for PA and .63 for NA. Given the low reliability of the NA items we acknowledge this is a limitation of the NA measure used in the current study, and results of any analyses that included NA should be interpreted cautiously.

**Body Image-Focused Self-Compassion.** State body image-focused self-compassion-compassion was assessed using the same version of the state SCS described in Study 2**.** Cronbach's alpha was .94 in the current sample.

**Body Appreciation.** State body appreciation was measured using an aggregate of five items drawn from the Body Appreciation Scale (Avalos et al., 2005). We felt that including more items from a validated measure of positive body image would improve upon our one-item VAS measure of body acceptance used in Study 2. These items were modified into VAS items. This was done instead of including a full-scale measure of body appreciation so as to minimize participant burden and to capitalize on initial implicit reactions (see Study 2 for full rationale for the use of VAS items). Participants were asked to indicate their current thoughts and feelings towards their body by sliding a marker on a visual scale from 0 (not at all) to 100 (extremely). The items included were "appreciative of my body", "accepting of my body's flaws," "respectful of my body's needs," "my self-worth is independent of my body shape or weight," and "positive about my body." These items were chosen as they were face valid and amenable to answering in VAS format while also tapping into the commonly cited facets of positive body image (Avalos et al., 2005) – namely, a) holding favourable opinions about one's body, b) accepting one's body despite any physical flaws or imperfections, and c) respect for one's body by attending to its needs and engaging in healthy behaviours. We chose not to include the last facet, "protection of the body by rejecting unrealistic body images portrayed in the media," as we did not think participants would be able to reliably report on this facet in a momentary manner and within the context of the study. Scores were averaged across the five VAS items to create a total score for body appreciation. Cronbach's alpha was .90 in the current sample indicating strong internal consistency.

**Body Image Distress.** State body image distress was measured using the same aggregate of 4 VAS items used in Study 2. Cronbach's alpha was .92 in the current sample.

**Engagement and Attention.** Participant engagement and attention to the overall study was measured using the same VAS item as in Study 2.

**Distraction.** Participants' level of distraction during the audio clip was measured using the same VAS item and multiple-choice list of distracting activities as in Study 2.

***Procedure***

Participants signed up for their in-lab timeslot (Part 2) from the online psychology research pool at the university and received a link to complete Part 1 of the study online at least three days before this scheduled session. Part 1 consisted of self-report measures assessing trait variables, which were not the focus of the current analyses. The laboratory session, (Part 2) also followed the same sequence as Study 2, where participants reported on their PA and NA (Time 1), recalled a time when they felt self-conscious or negative about their body, and then reported on their PA and NA again (Time 2) allowing us to confirm that recalling the negative body image event was indeed distressing. Then, outcome variables (body image-focused self-compassion, body appreciation, body image distress) were measured at Time 2, to serve as covariates in analyses. The same cover story was provided that was used in Study 2 as a rationale for asking the participants listen to the audio clip. Participants were then randomly assigned to listen to one of three audio clips of someone describing a situation where their own body image was threatened and then sharing their reaction. After hearing their assigned audio clip, participants again completed the state SCS and the relevant VAS outcome measures (Time 3) which would serve as dependent variables in analyses. After completing Time 3 outcome measures, participants completed measures of attention and engagement. Lastly, participants were provided with a debriefing that explained the true purpose of the study and why partial disclosure and deception was necessary.

***Experimental Manipulation***

The new clips were created following the same process as in Study 2, wherein researchers created the clips to be face valid and theoretically sound, with multiple revisions based on input from other researchers studying body image, affect, and interpersonal relationships. The Self-Compassion audio clip from Study 2 was retained as the Adaptive Body Coping condition wherein the actor in the clip reported experiencing body image distress and also treated herself and her body with compassion, resulting in reduced distress. Two new conditions, Body Distressed and Body Contented*,* replaced these latter two conditions. The Body Distressed clip described an experience with body image distress, including the negative feelings that the participant experienced towards herself, the situation, and her body but lacked a component involving a positive coping strategy and way of relating to one's body. The Body Contented condition lacked any depiction of body image distress, but instead portrayed someone behaving adaptively towards their body, denying that she struggles with body image distress, instead expressing that she eats intuitively and feels a sense of effortless comfort with her body.

Both the Body Distressed and Body Contented conditions began with the same distressing scenario described in Study 2. The Body Distressed condition depicted the participant experiencing body image distress as a result of the negative comments made by her grandfather without attempts at distress reduction or adaptive body image relating; i.e.,

> "…I was bothered by his comment for sure. I was really shocked and embarrassed that my weight gain was noticeable enough for him to comment on. I was also hurt, and again pretty humiliated because he is my grandfather, and I kind of thought he wouldn't notice or care about that kind of thing. I felt really self-conscious the rest of the night."

Unlike the other two conditions the Body Contented condition depicted someone who denies experiencing a distressing body image situation and relates well to her body, going on to describe how she feels about her body, and how that affects her ability to eat, be physically active and engage in her daily life; i.e.,

> "…I honestly can't think of what else to talk about that is related to body image. I've never had to deal with really drastic weight gain or anything, my size has always been pretty stable. Like I guess in terms of body image I'd say I'm just like…. comfortable, and it's nice. Like I don't spend a ton of time in front of the mirror in the morning trying on multiple outfits, which I know some people have to deal with. And food-wise I pretty much eat whatever I want."

Steps were taken to remove any implication of prior body image distress to differentiate this condition from the other two conditions. It was stressed that the individual's comfort with her body and intuitive behaviours were not a conscious decision to protect and cultivate positive body image, or as a way to stave off negative body image, but were rather an unconscious by-product of her personality and life experiences. That is, she is simply not invested in engaging in behaviours to try to change or control her weight and shape. As such, the type of adaptive body image behaviour in the Body Contented condition is different from the Adaptive Body Coping clip; in the latter, the individual consciously engages in strategies to cultivate positive body image and decrease body image distress.

Following the experimental manipulation, participants were asked to again bring to mind the negative personal body image event they had earlier recalled and answer the same VAS questions assessing body image and affect, as well as full scale measures of body image-focused

self-compassion. Following this they filled out measures of attention/engagement and distraction and were debriefed about the true nature of the study.

## Results

### *Analytic Strategy*

Following the analytic strategy used in Study 2 all analyses were conducted in IBM SPSS Statistics 22 using one-way analyses of covariance (ANCOVAs) for the main analyses and repeated measures and one-way ANOVAs for auxiliary analyses. The main independent variable was condition ("Body Distressed"- hearing a display of body image distress, "Adaptive Body Coping" -hearing a display of body image distress followed by adaptive coping and positive body relating, or "Body Contented"-hearing someone deny experiencing body image distress and instead relate well to their body). The main dependent variables were participants' body image-focused self-compassion, body acceptance and body image distress after listening to the audio clip, while covariates were pre-clip levels of these same variables.

### *Preliminary Analysis*

**Descriptive Statistics and Correlations.** Normality was assessed within each condition for each dependent variable. All outcome variables demonstrated normal distributions across conditions. Two participants demonstrated outlying values on the body image focused state self-compassion as modelled by Tukey's boxplots, however upon inspecting the raw data, the scores were valid. One of the participants endorsed being distracted during the audio clip as rated by the multiple choice questions asking participants whether they were doing anything else while listening to the audio clip. However the other appeared to be a valid representation of the participant's body image focused self-compassion. As such we retained both participant's data in the main analyses. Means and standard deviations were calculated for each independent and

dependent variable. Table 6 presents zero-order Pearson correlation coefficients between all study variables at pre-manipulation, as well as for positive and negative affect before and after recalling a personally negative body image event (body image distress induction). As expected positive and negative affect after recalling a negative body image situation were significantly moderately correlated with the main outcome variables at pre-manipulation. In terms of the main outcome variables, correlations were in the expected directions such that body image distress correlated positively with negative affect and negatively with positive affect, body image focused self-compassion, and body appreciation. All outcome variables demonstrated moderate-strong correlations with each other at pre-manipulation.

**Table 6**

*Zero-Order Correlations Between Study 3 Variables*

| | Pre-recall NA | Pre-recall PA | Post-recall NA | Post-recall PA | Pre-clip BI Distress | Pre-clip Body Appreciation | Pre-clip BI Self-compassion |
|---|---|---|---|---|---|---|---|
| Pre-recall NA | - | | | | | | |
| Pre-recall PA | .28** | - | | | | | |
| Post-recall NA | .33** | -.45** | - | | | | |
| Post-recall PA | -.17 | .68** | -.60** | - | | | |
| Pre-clip BI Distress | .20* | -.43** | .69** | .61** | - | | |
| Pre-clip Body Appreciation | -.17 | .61** | -.57** | .80** | -.75** | - | |
| Pre-clip BI Self-Compassion | -.17* | .49** | -.55** | .56** | -.75** | .72** | - |

$^{t}$ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

**Baseline Differences Between Conditions** Table 7 presents means and standard deviations for all variables at baseline/pre-manipulation by condition. As seen in Table 7, one-

way ANOVAs revealed that there were no differences in pre-manipulation levels of body image-focused self-compassion, body appreciation, or body image distress, or in pre-recall NA or PA across conditions.

**Pre and Post-Recall Affect.** Because the experimental manipulation was predicated on participants recalling a personal body image related situation that was negative/distressing, we needed to verify that the recall portion of the manipulation worked as intended. We conducted a repeated measures ANOVA to examine changes in participants' NA and PA from pre to post recall using the composite measures of positive and negative affect described in the measures section. The analyses revealed that the recall seemed to sufficiently engage the participants' emotions in the way it was intended. There was a significant effect of time on affect; NA increased significantly across conditions from pre- to-post recall ($F(1, 130) = 72.43$, $p < .001$, $\eta^2_p = .36$) and PA decreased significantly across conditions from pre to post recall ($F(1, 181) = 109.42$, $p < .001$, $\eta^2_p = .38$). As expected, there were no significant time by condition interactions for either NA or PA ($p = .28$ and $p = .12$ respectively) as the negative event recall happened before the participants listened to one of the three different experimental audio clips (Table 7).

**Table 7**

*Means (and Standard Deviations) of Study 3 Variables at Baseline*

| | Adaptive Body Coping | Body Contented | Body Distressed | Effect of Condition |
|---|---|---|---|---|
| Pre-clip NA [a] | 44.47 (24.34) | 36.33 (22.20) | 42.50 (22.76) | $F(2, 182)=2.07$, $p=.13$ |
| Pre-clip PA [b] | 53.22 (24.88) | 54.97 (23.64) | 45.35 (24.56) | $F(2, 183)=2.82$, $p=.06$ |
| Pre-clip BI Self-Compassion [c] | 3.46 (0.63) | 3.58 (0.63) | 3.49 (0.67) | $F(2, 204)=0.66$, $p=.52$ |
| Pre-clip Body Appreciation [d] | 54.72 (27.05) | 58.45 (24.05) | 48.87 (24.16) | $F(2, 186)=2.38$, $p=.10$ |
| Pre-clip BI Distress [e] | 51.67 (26.76) | 48.28 (26.67) | 52.04 (26.78) | $F(2, 172)=0.34$, $p=.72$ |

[a]n=185, [b]n=186, [c]n=207, [d]n=189 [e]n=175

**Engagement and Attention.** The average rating of engagement with the study was 86 out of 100 (*SD* = 13.94) and there were no differences in participant engagement across conditions ($F(2, 204)= 0.65$, $p = .94$). The average rating of attention paid during the audio clip was 92 out of 100 (*SD* = 12.00). There were also no differences in ratings of attention to the audio clip across study conditions ($F(2, 202) = .57$, $p = .57$. Overall it appeared that the participants across experimental conditions were engaged with the overall study and paid close attention to their assigned audio clip. Six participants reported being distracted during the audio clip as evidenced by their endorsement of at least one item on our distraction measure (e.g., falling asleep, moving on to the next page of the survey etc.); however, the pattern of results remained the same when these individuals' data were excluded from analyses and so we chose to retain them.

***Main Analyses***

**Body Image Focused State Self-Compassion.** A one-way ANCOVA was conducted to examine the effect of condition on state body image focused self-compassion, controlling for pre-clip body image focused state self-compassion. The test of the intercept revealed a significant increase in levels of body image focused state self-compassion, independent of condition, from pre to post clip, ($t(203) = 2.57$, $p < .011$, $\eta^2_p = .03$), with scores increasing by an average of 0.35 out of 5 (*SE* = 0.14) yielding a small effect size. There was also a significant main effect of condition on post-clip state body image related self-compassion ($F(2, 203) = 12.24$, $p < .001$, $\eta^2_p = .11$) with medium effect size. As seen in Table 8, contrasts revealed that those in the Adaptive Body Coping condition had significantly higher body related state self-compassion after listening to their randomly assigned audio clip than those in both the Body Distressed condition ($p = .04$, $\eta^2_p = .02$) and than those in the Body Contented condition ($p <$

.001 $\eta^2_p$ = .11) with small and medium effects respectively. Furthermore, those in the Body Distressed Condition also had significantly higher post-clip state body image focused self-compassion than those in the Body Contented Condition ($p$ = .004, $\eta^2_p$ = .04) with a small effect.

**State Body Appreciation.** A one-way ANCOVA was used to examine the effect of condition on post-clip state body appreciation, controlling for pre-clip state body appreciation. A test of the intercept showed a significant increase in levels of body appreciation across all conditions, from pre to post clip, ($t$(180) = 4.85, p < .001, $\eta^2_p$ = .12), with scores increasing by an average of 11.74 out of 100 ($SE$ = 2.42) yielding a medium effect. Results showed that there was a significant main effect of condition on post-clip state body appreciation ($F$(2, 180) = 8.14, $p$ < .001, $\eta^2_p$ = .08) with a medium effect size. As seen in Table 8, contrast showed that those in the Adaptive Body Coping condition had significantly higher body appreciation after listening to the audio clip than those in either the Body Contented condition ($p$ < .001 $\eta^2_p$ = .08) or the Body Distressed condition ($p$ = .017, $\eta^2_p$ = .03) with medium and small effects respectively. There were no significant differences in levels of post-clip state body appreciation between the Body Distressed condition and the Body Contented Condition ($p$ = .09, $\eta^2_p$ = .02).

**State Body Image Distress.** A one-way ANCOVA was used to examine the effect of condition on post-clip state body image distress controlling for pre-clip state body image distress. When testing the intercept, results revealed that there was no significant change in average levels of body image distress across conditions, from pre to post clip , ($t$(159) = 0.47, $p$ < .64, $\eta^2_p$ = .001), with scores increasing by an average of 1.30 out of 100 ($SE$ = 2.80). However, results showed that there was a significant but small main effect of condition on post clip state body image distress ($F$(2, 159) = 3.53, $p$ = .032, $\eta^2_p$ = .04. As seen in Table 8, contrasts revealed that those in Adaptive Body Coping condition had lower state body image distress than those in the

Body Distressed condition at a trend level ($p$ = .07, $\eta^2_p$ = .02) and had significantly lower body image distress than those in the Body Contented condition ($p$ = .01, $\eta^2_p$ = .04) with a small effect. There were no significant differences in body image distress between the Body Distressed and Body Contented conditions ($p$ = .37, $\eta^2_p$ = .005).

**Table 8**

*Multiple Comparisons and Mean Differences in Dependent Variables (Study 3)*

| Comparison | Mean Difference | SE | 95% CI |
|---|---|---|---|
| | | ***Body Image Self-Compassion***[a] | |
| Adaptive Body Coping vs Body Contented | 0.29* | 0.06 | 0.17, 0.41 |
| Adaptive Body Coping vs Body Distressed | 0.12* | 0.06 | 0.006, 0.24 |
| Body Distressed vs Body Contented | 0.17* | 0.06 | 0.05, 0.28 |
| | | ***Body Appreciation***[b] | |
| Adaptive Body Coping vs Body Contented | 9.35* | 2.33 | 4.75, 13.95 |
| Adaptive Body Coping vs Body Distressed | 5.46* | 2.27 | 0.97, 9.95 |
| Body Distressed vs Body Contented | 3.89 | 2.29 | -0.63, 8.42 |
| | | ***Body Image Distress***[c] | |
| Adaptive Body Coping vs Body Contented | -7.02* | 2.71 | -6.62, -1.36 |
| Adaptive Body Coping vs Body Distressed | -4.68[t] | 2.58 | -4.96, 0.40 |
| Body Distressed vs Body Contented | -2.35 | 2.63 | -7.54, 2.84 |

*Note*. [a] Comparisons based upon ANCOVA adjusted means controlling for pre-clip Body Image Self-Compassion mean of 3.51.
[b] Comparisons based on ANCOVA adjusted means controlling for pre-clip Body Appreciation mean of 54.33.
[c] Comparisons based on ANCOVA adjusted means controlling for pre-clip Negative Affect mean of 52.38.
[t] Significant at trend level ($p$=.07)

### *Summary of Results*

After recalling a personally distressing body image event, participants in the Adaptive Body Coping condition experienced significantly greater state self-compassion and body appreciation than those in the Body Distressed and Body Contented conditions. Those in the Adaptive Body Coping condition also reported lower body image distress than those in the Body Distressed condition at a trend level, and significantly lower body image distress than those in the Body Contented. Those in the Body Distressed Condition reported significantly greater state self-compassion than those in the Body Contented condition, but did not differ significantly from the Body Contented condition on the other two outcome variables.

**Discussion Study 3**

Results supported our hypothesis such that hearing someone display initial body image distress and cope with it effectively yielded more adaptive body image outcomes – namely, greater body image-related self-compassion and body appreciation – than hearing someone simply display body image distress with no attempt at coping, or relate well to their body without any distress or coping. There were no a priori hypotheses about the relative impact of hearing someone share body image distress only versus someone conveying positive body image only, and these conditions did not differ in their impact on body image distress or body appreciation. However, those who heard someone share body image distress had significantly better state body image related self-compassion than those who heard someone disclose their positive body image.

These results suggest that if one is actively distressed about a body image threat, then the types of attitudes and behaviours that are most beneficial to observe in others, and thus reinforcing to emulate, may be ones that convey some experience with body image distress. Furthermore, both social learning theory and research on observationally learned coping stipulate that similarity is a moderator of social learning (Bandura, 1977; Schunk, 1987). It may be that when an individual is actively facing a body image threat, it is difficult to relate to another individual displaying adaptive body image with no hint of body image distress; this difficulty relating may deter the distressed individual from emulating the other person's positive outlook. Additionally, without knowledge that the other person has experienced body image distress, there is no "roadmap" for the observer to follow in terms of the types of cognitions and behaviours to engage in to reduce their distress and foster a subsequently more adaptive body image. These results support existing literature suggesting that this roadmap may be key to the

benefits of observing coping models over and above mastery models, though these mechanisms require direct investigation.

The results of this study are somewhat contradictory to qualitative evidence suggesting that simply being around others who have a positive orientation towards their body facilitates positive body image (Wood-Barcalow et al., 2010). However, this qualitative research asked participants to retrospectively report on factors that helped them develop and maintain positive body image *in general*, thus it is unclear whether or how being around those with positive body image may benefit individuals who may not have already established a baseline of stable positive body image, and/or when trying to cope in moments of active body image distress.

Indeed, the findings of this study suggest that the impact of observing others' body image coping on one's own body image is not a simple matter of mirroring the body image of one's interaction partner; rather, the propensity to emulate another person's body image attitudes may vary with both *intra* and *inter*-personal context. Results showed that not only was hearing someone display uniformly positive body image less helpful to participants than hearing someone cope effectively with body image distress, but it was no more beneficial than hearing someone express body image distress with no subsequent coping, and was in fact less beneficial for participants' state self-compassion. Given that common humanity, a subcomponent of self-compassion, requires an awareness that one is not alone in one's suffering (Neff, 2003), it makes sense that hearing someone else express body image distress may facilitate more self-compassion vis-à-vis personal body image distress than hearing someone deny experiences with body image distress and instead express positive body attitudes. Indeed, experimental research in the area of fat talk has shown that when participants were trying on a swimsuit, which is a known body image threat, hearing someone else engage in fat talk decreased their body dissatisfaction.

Conversely, if they were trying on a sweater, which is not as threatening to body image, hearing fat talk was detrimental to their body image (Gapinski et al., 2003). Taken together with the current findings, it may be that when one is experiencing active body image distress, it is most beneficial to hear someone describe how they cope effectively with body image distress, but it can also be beneficial to simply hear that others also experience body image struggles. It will be important for future research to explore these possibilities. A fruitful next step might be to replicate the present study by experimentally manipulating whether or not participants are facing or recalling body image distress to see if this context moderates the effects of the peer's body image displays on outcomes.

Practically the conclusions from this research have both clinical and day-to-day applications. Clinically it may be useful for a therapist to model adaptive coping with body image distress, such that the patient understands that the therapist is drawing on lived body image experience. This may increase patient motivation and buy-in towards relevant body image interventions. In terms of how this research may be applied in one's day-to-day experience, it may allow individuals to leverage their social context to help them cope with an acute body image threat. This research suggests that if one is in acute body image distress, perhaps counter intuitively, it may be less helpful to seek out someone who has never had body image difficulties and/or feels very positively about their body, and will be more helpful to seek out the company of someone who has dealt with body image issues in an effective way. Conversely, if one is approached by someone experiencing body image distress, one is likely to have a more positive impact on that person by sharing personal experiences with body image distress rather than denying such distress, and this is likely to be most helpful if one can share some form of adaptive

coping with those body image difficulties (e.g., trying to be self-compassionate, trying to boost self-esteem, trying to distract oneself).

**Discussion of Study 2 & 3**

These two studies examined whether and which displays of adaptive body image in others can benefit personal body image when faced with a body image threat. Study 2 revealed that hearing someone respond to their own body image distress in a way that effectively lowered their distress was beneficial for the listener. However, contrary to our hypotheses, it did not matter what specific type of coping strategy was heard; rather body image experiences improved independent of whether participants heard someone talk about being self-compassionate, boosting their self-esteem, or distracting themselves in the face of their own body image threat. Our second study, Study 3, sought to extend on these findings by breaking down and comparing the variables that were common across all three conditions (initial distress, effective coping, and subsequent positive affect and body image relating) in order to identify which components were most beneficial for the body image of the listener. Results indicated that in the face of recalled body image distress, it was most beneficial to hear someone cope effectively with body image distress rather than simply express body image distress or simply relate well to their body in general. Overall, these two studies indicate that when facing a body image threat, witnessing adaptive body image attitudes and behaviours can indeed benefit the body image of the observer; moreover, a display that acknowledges personal experience with body image distress may be more helpful than one that conveys uniformly positive body image.

***Theoretical Implications***

These studies are notable in that they were among the first to experimentally examine how interpersonal transmission of body image attitudes and behaviours may facilitate more

adaptive outcomes in the face of body image threats. Both studies support the idea that adaptive body image attitudes and behaviours are amenable to interpersonal transmission and may provide benefits for those experiencing body image distress. This is an important addition to the body image literature, which thus far has established the negative but not positive impact that interpersonal factors can have on one's body image, both at a state level and a trait level (Paxton et al., 1999; Lieberman et al., 2001; Miething et al., 2018; Stice, 2003; Gapinski et al., 2003). The present research also highlights that not only does witnessing others experience and cope with body image distress mitigate body image distress and dysfunction, it also promotes body appreciation and body image-focused self-compassion. Both body appreciation and body image-focused self-compassion are associated with positive and adaptive body image, rather than merely the absence of negative and dysfunctional body image (Cox et al., 2019; Homan & Tylka, 2015; Braun et al., 2016; Tylka & Wood-Barcalow, 2015).

When considering the broader body image literature, it may be true that being around those with positive body image contributes to individuals' ability to experience positive body image in general (Wood-Barcalow et al., 2010). However, the present findings suggest that the ways in which others' adaptive body image impacts one's own body image may be dependent on one's current levels of state body image distress. Social learning theory (Bandura, 1977) offers a compelling, though speculative explanation for the mechanism of action underlying these contextual differences. According to the theory, one must be able to either consciously or unconsciously process and attend to the behaviour that is being modelled, as well as the reinforcing results of the behaviour, in order for observational learning to occur. It may be that when one is actively experiencing body image distress, the attitudes and behaviours of someone who simply expresses contentment and positivity towards their body is not as relevant or salient

as those of someone who has also experienced body image distress. Furthermore, attitudes and behaviours that are aimed at reducing body image distress may serve as stronger vicarious reinforcement for adopting the same behaviour than those of someone whose behaviour does not directly address body image distress. Thus, displays associated with body image distress may be more closely attended to and may be more likely to be emulated in a moment of body image distress. However, if one is not actively distressed about their body, they may be able to notice the reinforcing consequences of having positive body image (i.e., increased ability to eat intuitively, increased confidence, less compulsions to exercise excessively or diet), vicariously reinforcing the adoption of a more positive body image orientation. Given the speculative nature of these ideas, it will be important for future research to directly test the causal mechanisms underlying these results. Furthermore, the current study chose to focus on how one specific type of interpersonal factor (the modelling of adaptive body image coping in the face of body image threats) may benefit individuals' body image, and these encouraging results highlight the need to expand and broaden this line of research. Next steps include identifying other types of interpersonal factors and situational contexts that facilitate adaptive body image outcomes.

***Practical Implications***

Practically speaking, this research has important implications for programs that seek to foster positive body image in young women such as The Body Project (Stice & Presnell, 2007) The present findings suggest that interventions pairing education around effective strategies for coping with body image distress with encouragement for group participants to vocalize their experience of using these strategies both within the group and in their personal lives, would be an effective way to capitalize on this body image transmission effect. Similar interventions could be applied within Health at Every Size ® (Association for Size Diversity and Health, n.d.)

programs to help participants combat weight stigma and share their experience of doing so with others. On a broader level, the present research suggests that it is important to both equip women with effective coping strategies for dealing with negative body image, and to facilitate the opportunity for young women to have open dialogues about their experiences of coping with body image distress.

***Limitations and Future Directions***

There were several limitations to the current studies. First, the samples were of modest size and relatively homogenous in nature, consisting of young adult female university students. Although the samples were limited to females for feasibility reasons, and to control for general aspects of similarity between the participant and the model in the audio clip, it will be important to replicate these findings within other demographic groups. Indeed, research shows that men experience body image distress and dissatisfaction (Jones & Crawford, 2005; Smolak & Stein, 2006); however Martz et al. (2009) found that men reported greater pressure to engage in self-accepting talk then fat talk or positive body image talk, thus it may be that although men experience body image distress, current social norms discourage them from self-disclosing these types of feelings. As such, social disclosure around body image distress may not typically occur in male populations, precluding men from experiencing the transmission of adaptive body image coping; however, expanding on the current research may elucidate this question in the future.

Additionally, participants were asked to recall a past situation that caused them body image distress, and although analyses suggested that even recalling such experiences induced distress and negative affect, as well as sufficient differences in body image outcomes resulting from the experimental manipulation, it will be important to confirm the ecological validity of this research paradigm using in vivo exposure to a body image threat, as well as examining in person

interaction with a real life partner rather than listening to vignettes. Furthermore, although the VAS measures used in the current set of studies were face valid and demonstrated good internal validity, the use of non-validated measures is a limitation and it will be important to replicate these findings using validated scales. Relatedly, the reliance on self-report measures alone is a limitation due to potential response bias. Future research may augment the use of self-report measures with behavioural indicators of body image, for example with an exercise or eating task.

Given that these studies did not include a follow up session, it is unclear how long the experimental body image effects lasted. Future research should investigate the downstream effects of exposure to adaptive responses to body image distress. It will be important to determine if this exposure is only helpful if one is immediately faced with their own body image distress, or whether one be able to incorporate the type of coping they witnessed into their own response to personal body image distress days, weeks, or months later.

It will also be critical to examine how and whether the benefits associated with witnessing displays of adaptive body image coping reactions changes when women share maladaptive coping strategies for dealing with body image concerns. The strategies presented in these audio clips modelled coping that allows for either a positive or neutral stance towards oneself and one's body; however, other research shows that women tend to cope with body image distress in maladaptive ways (i.e., appearance fixing, and avoiding) (Cash et al., 2005; Melnyk et al., 2004) which may effectively reduce immediate body image distress, but not foster a more positive and accepting relationship with the body. Given that people seem to be regularly turning to these strategies and they may provide short-term relief from body image distress, social learning theory suggests that they may be amenable to vicarious reinforcement (i.e., "Oh you're feeling fat today? Well when I'm having a fat day I just fast until dinner and I feel so

much better!"). Correlational research suggests that such strategies may be amenable to this interpersonal transmission effect. A study on body image within and across peer groups of adolescent girls show that use of extreme-weight loss behaviours such as purging, crash dieting and using diet pills are significantly correlated within friend groups (Paxton et al., 1999). Thus, it will be important to experimentally examine this transmission effect when witnessing maladaptive but seemingly effective strategies and how this affects one's own body image.

Lastly, as these studies were generally oriented as providing proof of concept, we did not examine interpersonal or intrapersonal factors that may moderate the transmission effect, for example closeness to the encounter partner, the body weight and shape of the encounter partner etc. which were precluded from analyses using the current vignette methodology.

***Conclusions***

Overall the results of the present two studies suggest that adaptive body image attitudes and behaviours are indeed amenable to interpersonal contagion. Results also suggests that when faced with a body image threat, it may be most helpful to witness a display of adaptive body image that involves the use of effective coping strategies to reduce body image distress. Interestingly it appears that not all types of adaptive body image are equally beneficial to witness when experiencing body image distress. This research highlights the important potential that exists for interpersonal context to both protect and optimize one's body image outcomes, and speaks to the need for continued study of the ways in which body image attitudes and behaviours may have adaptive effects via interpersonal transmission.

# General Discussion

## Summary of Findings

This dissertation explored whether and how an individual's interpersonal context can positively influence body image. Specifically, three studies examined whether and how exposure to adaptive body image attitudes and behaviours in others can result in more beneficial body image experiences for a given individual, such as lower levels of body image distress and more positive body image. This series of studies sought to examine this question in two ways: by investigating how day-to-day interactions with others displaying adaptive body image influence personal body image, and by examining how witnessing a peer cope adaptively with a difficult body image situation influences personal coping with body image distress. Findings from this research, summarized below, highlight that certain attitudes and behaviours in others can positively influence college women's body image.

### *Study 1*

The goal of the first study was to naturalistically examine the unique effects of exposure to others who were body focused (i.e., who talked about dieting, were focused on exercising and working out, and who were preoccupied with their bodies) and non-body focused (i.e., who focused little on body image, and who ate intuitively) on both positive and negative body image. A daily diary methodology was used, allowing women to track the frequency of their daily interactions with body focused and non-body focused others as well as relevant body image outcomes over the course of a week. Positive body image criterion variables were body appreciation and intuitive eating, and negative body image criterion variables were dietary restraint and body dissatisfaction. It was hypothesized that frequency of interactions with body focused others and frequency of interactions with non-body focused others would uniquely

contribute to women's body image at the between persons level and at the within persons level. Between-persons, it was hypothesized that participants with more overall exposure to body focused others over the week would report higher dietary restraint and body dissatisfaction, as well as less body appreciation and intuitive eating, and that those with more overall exposure to non-body focused others would show the reverse pattern. At the within-persons level, it was hypothesized that having more frequent interactions with body focused others on a given day as compared to participants' usual level would be related to worse body image and that more frequent interactions with non-body focused others than usual would be related to better body image.

Hypotheses were fully supported at the between-persons level. Specifically, multilevel modelling revealed that higher average levels of exposure to non-body focused others over the week uniquely predicted greater intuitive eating, greater body appreciation, and less dietary restraint, whereas higher average exposure to body focused others predicted these outcomes in the opposite direction. Hypotheses were partially supported at the within-persons level: daily levels of exposure to body focused others did not significantly predict eating and body image, but daily exposure to non-body focused others did. On days when women had more exposure to non-body focused others than their personal average level over the week, or than their previous day's level, eating and body image were better. Taken together, findings offered support for the theory that being around others perceived as having adaptive body image may be linked to better body image in general and around the time of this exposure.

***Study 2***

The goal of the second study was to experimentally examine the impact of witnessing someone cope adaptively with a body image threat on an individual's momentary body image-

related experiences when faced with personal body image distress. Self-compassion has been associated with reduced negative body image, as well as more positive body image, thus self-compassionate coping was chosen as the adaptive coping method to be examined. Participants underwent a body image distress induction and were then asked to listen to a vignette in which a peer described how they reacted to a distressing body image event using either self-compassion, self-esteem enhancement, or distraction to reduce their distress. Outcome variables were participants' body image focused self-compassion, body image distress, and body acceptance. It was hypothesized that those who heard a self-compassionate response would experience greater body image focused self-compassion and body acceptance, and lower body image distress, compared to those who heard a self-esteem boosting or distracting response. There was no effect of condition on any of the outcome variables, contrary to our hypotheses. However, participants reported significantly higher body acceptance and body image focused self-compassion after hearing their assigned audio clip, regardless of whether they heard a self-compassionate, self-esteem enhancing or distracting coping reaction to body image distress. Participants' level of body image distress, however, did not change from before to after hearing the audio clip.

***Study 3***

Results of Study 2 suggested that participants benefited from hearing a peer describe their coping reaction in a distressing body image situation regardless of the specific type of coping used. Study 3 sought to understand the active components of these coping vignettes that accounted for participants' beneficial response. The common features across all three conditions from Study 2 were that the alleged peer: a) experienced distress related to a body image situation and b) engaged in adaptive body image behaviour via the conscious use of a coping strategy to reduce her body image distress. As such the current study created two new vignettes to isolate

these factors in order to examine whether the therapeutic benefit for participants was derived from 1) hearing that peers also struggle with body image distress 2) hearing a peer engage in adaptive body image behaviour and ultimately relate well to their body image or 3) a combination of the first two factors. Because all three vignettes from Study 2 depicted both initial body image distress and someone ultimately relating adaptively to their body, only one was retained: the self-compassionate clip, called the Adaptive Body Coping condition. The two new vignettes depicted someone reacting solely with distress to their body image situation but not displaying adaptive coping (Body Distressed condition), and someone who denied body image distress and simply relates well to their body (Body Contented condition). The same procedures were used as in Study 2. It was hypothesized that those who heard the condition that combined the sharing of distress with adaptive body image coping would experience significantly better momentary body image – namely, greater body image related self-compassion, body appreciation, and less body image distress – than those who heard the other two conditions. This hypothesis was supported: those in the Adaptive Body Coping Condition experienced significantly greater state body image related self-compassion and body acceptance than those in the other two conditions; they also experienced significantly less body image distress than those in the Body Contented condition, and less body image distress than those in the Body Distressed (trend level). Furthermore, those in the Body Distressed condition experienced greater body image related self-compassion than those in the Body Contented condition.

**Synthesis of the Findings**

There is existing research to support the idea that witnessing dysfunctional body image attitudes and behaviours can influence personal body image in a negative way by increasing

body dissatisfaction, body image preoccupation, and maladaptive behaviours such as dieting, fat-talk, and the use of extreme weight loss behaviours (Stice et al., 2003; Wertheim et al., 1997; Tucker et al., 2007; Paxton et al., 1999). This dissertation is notable in that it is among the first set of studies to empirically examine the effects of exposure to adaptive body image in others. Findings support the idea that in the same way that others' maladaptive body image behaviours and attitudes can negatively influence personal body image, others' adaptive body image behaviours and attitudes can positively influence personal body image.

This research has important implications for our understanding of body image in general, and for the positive body image literature specifically. Firstly, all three studies in this dissertation supported the idea that positive body image variables are amenable to change at a state level as a function of situational interpersonal factors. Avalos and Tylka (2006) have shown that interpersonal factors impact positive body image generally, finding that individuals who perceive those in their life as generally more accepting of their body have higher overall positive body image. The present research extends this work by highlighting that a given individual's level of positive body image may fluctuate on a given day (Study 1) or in a given moment (Studies 2 and 3) based on the extent to which she is exposed to others portraying, or perceived as having, adaptive body image. The fact that this pattern of results emerged in both experimental and observational research lends strength to these conclusions. Moreover, findings are encouraging as they suggest that prolonged exposure to adaptive interpersonal influences are not required to reap the body image benefits. Nevertheless, longitudinal studies should follow-up on the present research to determine the sustainability of these benefits following exposure to adaptive body image in others.

Secondly, there has been much work done to establish positive body image as unique from the absence of negative body image with distinct *intra*personal outcomes and patterns. That is, positive body image variables, such as body appreciation and intuitive eating, contribute uniquely, and often times in differential ways to an individual's psychological and behavioural outcomes compared to negative body image variables, and furthermore can coexist with negative body image (Bailey et al., 2016; Tiggemann & McCourt, 2013). The current research is among the first to explore this dichotomy in the interpersonal realm.

In Study 1, we discovered that daily and weekly exposure to non-body focused others contributed uniquely to body image outcomes when accounting for exposure to body focused others. If positive and negative body image simply lay at opposite ends of the same spectrum, we would not expect that exposure to non-body focused others would contribute uniquely to these outcomes beyond the impact of low exposure to body-focused others. Furthermore, we found that body appreciation and intuitive eating were positively influenced by exposure to non-body focused others at both the between- and within-persons level, while being negatively influenced by exposure to body focused others at only the between-persons level. Therefore, in general, participants' positive body image seemed to be more strongly influenced by adaptive body image in others than by negative body image in others. In Studies 2 and 3, positive body image experiences (i.e., body appreciation, body acceptance and body image related self-compassion) were higher on average after listening to a peer's body image coping response, whereas levels of body image distress did not change significantly. Together, these findings further supports the idea that positive and negative body image are two distinct constructs, and further highlights that they may be differentially sensitive to positive and negative interpersonal factors respectively. Given how pervasive and entrenched body dissatisfaction is within our society, the present

results are encouraging as they suggests that even if individuals' remain body-dissatisfied, they may still be able to benefit from the effects of social exposure to adaptive body image in the form of more positive body image.

Finally, although the present results require replication, it appears that context may play an important role in how and what type(s) of positive body image in others is most beneficial for an individual at a given time. In Study 3, results suggest that in times of active body image distress, displays of adaptive body image are more beneficial for the observer when they are framed as the result of effective coping with some experience of body image distress, rather than simply existing without a history of body image distress. At first glance, these findings appear to contrast the findings of Study 1. Those results suggested that exposure to others who are focused on their body image is detrimental to personal body image while exposure to others who eat intuitively and focus little on their body, like the positive body image displayed in Study 3's "Body Contented" condition, positively influences personal body image experiences. Study 3's results also seemingly contradicts the qualitative findings of Wood-Barcalow et al. (2010) which suggested that simply observing the favourable sequale of adaptive body image in others is sufficient to motivate individuals to adopt a more positive orientation to one's own body. However, there is previous research to suggest that the ways in which body image displays impact an individual depend on the level of body image threat that the individual is experiencing in that moment. Gapinski et al. (2003) showed that when women were placed in a situation more threatening to their body image – trying on a swimsuit – they in fact experienced less body dissatisfaction in response to overhearing someone else fat talk, while if they were in a non-body image threatening situation they experienced greater body dissatisfaction in response to hearing someone else fat talk.

In studies 2 and 3, we successfully induced a state of acute body image threat by having participants recall a negative body image situation, and it was from this state that participants responded to interpersonal body image displays. However, given the daily diary methodology used in Study 1, it is unlikely that participants were in a state of acute body image threat every time they interacted with others. Rather, it is more likely that the information captured in Study 1 reflected participants' normative body image fluctuations in response to interpersonal body image exposure from their personal baseline rather than from a place of especially high body image distress.

Thus, it may be that on a day-to-day basis, when one is not in a state of acute body image distress, it is indeed beneficial to interact with others who display adaptive body image regardless of whether they demonstrate lived experience with body image distress. However, when in a state of acute body image distress, it may be most beneficial to seek out others who have effectively dealt with body image distress to ultimately achieve a more positive body image orientation. Overall, the results of the present studies have demonstrated that displays of adaptive body image can positively impact the body image of those who are exposed to them, however, not all displays of adaptive body image are equally helpful in a given context. Future research should seek to replicate and confirm these findings, as well as explore other contextual factors that may impact how and what types of adaptive body image displays are interpersonally beneficial.

**Theoretical and Empirical Contributions**

Positive body image has been linked to a variety of important outcomes including lower levels of depression, anxiety, and disordered eating, greater psychological well-being, engagement in health related behaviours, more intuitive eating, and more adaptive sexual

functioning (Andrew et al., 2016a, 2016b; Avalos & Tylka, 2006; Gillen, 2015; Ramseyer et al., 2019; Satinsky et al., 2011; Tylka & Kroon Van Diest, 2013)

Intrapersonal factors such as personality style, age, and perfectionism have been shown to relate to differences in body appreciation, (Swami et al., 2013; Tiggeman & McCourt, 2013; Innantuono & Tylka, 2012) however Cook-Cottone (2015) points to the intricate connections between an individual's intrapersonal experience of their body with their interpersonal experiences within their greater social context. Accordingly, the literature has started to examine how interpersonal factors influence positive body image (e.g., Waring & Kelly, 2020; Cline, 2017; Arroyo et al., 2018; Damiano et al., 2019) however, this dissertation is among the first to examine this question using both experimental and observational methodology, and to specifically examine how displays of adaptive body image impact an observer – that is, how the intrapersonal attitudes of others can positively influence the intrapersonal experiences of self in the body image domain.

***Extending the Acceptance Model of Body Appreciation and Intuitive Eating***

The Acceptance Model of Intuitive Eating (Avalos & Tylka, 2006) is one of the foremost theoretical models that offers a mechanistic explanation for how positive body image, including body appreciation and intuitive eating, is interpersonally influenced. The model draws on humanistic psychology and objectification theory, stating that when individuals feel unconditionally accepted and supported, both generally and with regards to their body, they will be better able to harness a more self-actualized approach to their body and eating, including being more attuned and responsive to their body's needs and cravings and taking a more appreciative attitude towards their body. Conversely, when women are given messages that they and their body is unacceptable and should be changed, they may be more compelled to use the

standards of others or society to dictate their eating and body image rather than letting their internal experiences guide them. That is, they may come to view their body as an object that needs to be fixed through dietary restriction rather than focusing on their internal experience of hunger, fullness or cravings to guide what they eat.

Waring and Kelly (2020) examined how college women's body image and eating varied across their specific relationships as a function of the features of these specific others (i.e., how much the other was perceived to be accepting of the participant's body, and how much the other appeared to be preoccupied with their own body). Participants' self-reported body image and eating fluctuated across their specific relationships, such that with others perceived to show greater acceptance of the participant's body and to be less focused on their own body, the participant reported eating more intuitively, experiencing greater body appreciation, and investing less in their appearance. Notably, body image varied more within a participant from one specific relationship to another than it did across participants (i.e., from one participant to another). Waring and Kelly's findings support and extend the Acceptance Model to demonstrate that not only does feeling that one's body is generally accepted by others predict adaptive body image, but one's body image fluctuates based on perceived acceptance of one's body within specific relationships. The current dissertation research further supports these findings by confirming that interpersonal variables may play a pivotal role in one's positive body image, and that one's positive body image may fluctuate across different social contexts as a function of the features of others. The findings of this dissertation also extend and build upon these findings by specifically demonstrating the beneficial impact that others' adaptive body image self-attitudes can have on one's body image across different contexts from day to day (Study 1) and moment to moment (Studies 2 & 3). Taken together, the present research suggests that in the

interpersonal sphere, it is not only how accepting we believe others feel towards our body that affects our body image, but also whether and how accepting others appear to feel vis-à-vis their own bodies.

### *Methodological Contributions*

Previous body image research examining the impact of others' body image on personal body image has largely not been able to account for the limitation that participants' perception of others' body image attitudes could be impacted by the participant's own body image orientation. For example, if the participant is high in appearance investment and feels dissatisfied with her body, she may be more likely to perceive others as body preoccupied. In Study 1, the daily diary design allowed for cross-lagged analysis that revealed that changes in participants' body image did not subsequently predict their perception of other's body image. As such, it is unlikely that participants' personal body image was driving their perceptions of others' level of body focus, suggesting that the qualities of others were indeed contributing to participants' body image. In studies 2 and 3, we used an experimental design that systemically and purposefully varied the body image characteristics of the peer that the participant was exposed to, meaning that participants were differentially impacted by the actual disparities in the body image attitudes and reactions modeled in each condition. Taken together the complementary study methodologies comprising this thesis support the idea that it is primarily the adaptive nature of an interpersonal display of body image that impacts an observer, rather than an observer's own body image impacting their perception of that display; nevertheless, these findings require replication.

### *Social Learning of Body Image Attitudes and Behaviours*

This dissertation also provides support for tenants of Social Learning Theory as it applies to intrapersonal attitudes and outcomes (Bandura 1977). The results of this dissertation suggest

that adaptive body image attitudes may indeed be learned from observing displays of those same attitudes in others. Thus, this study provides valuable information on how to optimize interpersonal transmission of adaptive body image that is in line with previous research on the differential impact of various modelling styles on learning. Specifically, this research supports the value of coping models, whereby someone displays initial difficulty with a task and subsequently models the cognitive, affective, and behavioural steps in mastering the task, over mastery models, whereby someone displays no initial struggle with the task and simply displays proficiency from the outset (Schunk, 1987, 1995).

Social Learning Theory also offers a compelling mechanistic explanation that may be common to both the findings of this study and the Acceptance Model. Social Learning Theory suggests that receiving support and acceptance from others related to one's body would facilitate self-reinforcement processes rooted in adaptive body image, while receiving judgement and criticism would facilitate self-reinforcement processes (Bandura, 1971) rooted in negative body image; that is, one would learn through direct reinforcement experiences that his or her body is either acceptable in its natural state or flawed and in need of fixing. Social Learning Theory also suggests that similar self-reinforcement processes could occur via observational learning such that observing others model adaptive or maladaptive body image attitudes would allow the observer to infer that being thin and fit is more or less desirable and valued in the eyes of the other. This may activate in the observer the same self-reinforcement strategies (i.e., self-disgust/criticism or self-compassion/acceptance) in order to obtain the reinforcing outcomes associated with pursuing thinness or body acceptance. As the underlying mechanism(s) behind the transmission of adaptive body image were not directly tested in the current set of studies, further research should test some of these hypothesized mechanisms of action.

Although more work is needed to examine the mechanisms that drive body image transmission, our findings support the efficacy of cognitive modeling as an effective learning strategy. Cognitive modeling is considered one type of observational learning and consists of modeled explanations with verbalizations of the model's thoughts and reasons for performing their actions (Schunk, 1987). This dissertation, specifically studies 2 and 3, supports the superiority of "coping" models versus "mastery" models in the acquisition of different body image attitudes. Coping models initially display the same struggles or deficits as the observer – in this case, becoming swept up in body image distress – but persevere in their attempts at change. Coping models gradually gain confidence and proficiency in the target skill or behaviour – for example, relating more positively to their body – while verbalizing the self-talk, behaviours, and cognitive-affective processes leading to their improvement. Mastery models demonstrate initial competency in the skill and cognitively model attitudes and reasoning consistent with someone who already has the target skill in their repertoire rather than someone who is going through the process of learning it. Coping models have demonstrated superiority not only in teaching concrete skills such as math (Schunk et al., 1987), but in imparting adaptive attitudinal change and coping skills when faced with test anxiety (Sarason, 1975). To our knowledge this is the first set of studies to examine this type of modeled coping with regards to body image.

Schunk (1995) outlines a mechanistic explanation for the differential outcomes of mastery and peer coping models, specifying that similarity and self-efficacy may be determining factors as to why coping models yield better outcomes. Research further outlines that a mastery model may be perceived as too dissimilar from the observer to provide useful cues for successful task performance; for example, one might think, "They don't struggle with body image like I do,

so I'm not going to be able to think or act like them." If one believes they will not be able to successfully emulate the behaviour being modelled, there would be decreased expectancy regarding the reinforcing value of performing the behaviour. A coping model may be perceived as more similar due to the shared initial struggle with body image distress. Witnessing a similar peer overcome a body image threat may provide the observer with an increased sense of self-efficacy such that if they can apply the same attitudes and behaviours used by the model, they too may experience the reinforcing consequences of improved body image. For example, an observer may think, "She was also really struggling with body image. If I try to think about it the same way she did, and do the things she described, I bet I will feel better about my body image too." Future research should examine whether self-efficacy may indeed be a mechanism via which exposure to coping models can help to change body image attitudes and behaviours; to our knowledge, this is a relatively unstudied in the current literature.

## Clinical and Practical Applications

### *Prevention Programs*

Body image dissatisfaction is known to be a pivotal risk factor in the development of eating disorders, and has been shown to impact individuals at a very early age, such that children as young as 3-6 years of age have reported body image concerns (Tatangelo et al., 2016). Additionally, studies have reported that approximately fifty percent of elementary school age children want to weigh less, and anywhere from fifteen to forty percent have already attempted to lose weight (Maloney et al., 1989; Schaur et al., 2000). As such, significant effort has been dedicated to prevention programming, aimed at reducing and inoculating youth against negative body image. Understandably, these programs have largely been designed from a disease prevention standpoint to target body dissatisfaction rather than a health promotion standpoint to

facilitate adaptive body image. Interestingly, the most efficacious programs to date have used a cognitive dissonance group-based format, including interventions whereby participants are required to practice verbally challenging the thin ideal, and to identify characteristics of themselves, both physical and non-physical, that they appreciate and to share what they appreciate with the group (Stice et al., 2007; Watson et al., 2016; Halliwell & Diedrichs, 2019). Both of these exercises reflect facets of positive body image that participants are required to verbalize (i.e., model) in the group context, where participants not only talk about themselves positively but also hear others talk about themselves positively. Indeed, outcome research on these programs indicated an increase in body appreciation and intuitive eating and a decrease in negative body image following completion (Halliwell et al., 2015; Halliwell & Diedrichs, 2019). Notably, the effects on positive body image were not as longitudinally robust as those on negative body image (Kroon Van Diest & Perez, 2013), thus it could be important for such programs to incorporate more exercises that target positive body image, and that do so in a way that continues to require participants to share their experiences of moving towards more positive body image attitudes and behaviours with other group members.

For example, during a mirror exercise, programs could invite participants to identify positive aspects of themselves and their appearance, and encourage them to explain initial thoughts, feelings and urges associated with body image distress, and then sharing the specific thoughts or actions that allowed them to feel more positively towards their bodies. For instance, a participant might be prompted to share an initial experience of distress such as, "When I first looked in the mirror all I noticed was how huge my legs are and how they jiggle when I move. I felt pretty depressed and it made me want to restrict…" She could then be guided to share how she coped with it adaptively, for example,

"…but then I reminded myself that these legs allow me to play with my kids and go on the walks with my friends that I enjoy so much. I know when I restrict I don't have the energy to do these things so even though my legs aren't as toned as I want them to be, and even though I still don't like how they look, reminding myself of these things helped me feel a bit more accepting of my legs and resist the urge to skip my snack that morning".

It would be important to examine the efficacy of such interventions as compared to interventions that do not require outward expressions of positive body image, such as interventions that require participants to write our their body-positive thoughts and feelings for themselves only. Such a study would help to determine whether, as the results of this dissertation suggest, there is additional benefit derived from hearing those around us express adaptive body image sentiments.

The research on programs that seek to improve body image indirectly through the development of other skills (i.e., practicing yoga, mindfulness) have demonstrated mixed results in terms of efficacy (Atkinson & Wade, 2015; Klingbeil et al., 2017; Lauche et al., 2017; Mitchell et al., 2007; Scime & Cook Cottone, 2008) Given that our research suggests that when one is suffering from body image distress, it may be important to be exposed to others modelling the cognitive affective process that one goes through to ultimately relate to their body more adaptively, it could be beneficial to add a "debriefing" component at the end of such sessions where participants and instructors are encouraged to share with the group if and how the practice of yoga positively impacted their body image, as well cognitive modeling of body attunement and appreciation. For example, participants might share, "During warrior pose, I appreciated how strong my legs felt in rooting me to the ground" or "I was able to notice extra tension in my hips today and listened to my body by not pushing the stretch as far as I normally would." This could

facilitate social learning processes that orient women more specifically to the body image benefits of yoga, whereas simply practicing yoga with no "road map" for how to reap the body image benefits may result in women orienting to other benefits (i.e., the social aspect, the meditative component) or even aspects that increase body image distress such as social comparison, the latter of which previous researchers have suggested may account for the mixed results of such interventions.

Finally, our findings related to the superior body image outcomes associated with observing someone who has successfully overcome body image disturbance provide support and explanation for the findings of a study by Mills et al. (2017) which evaluated young women's opinion of common eating disorder prevention messages. In characterizing the impact that personal aspects of the presenter may have on the credibility of these prevention messages, Mills et al. (2017) found that both participants with and without a clinical eating disorder felt that a female presenter who had recovered from an eating disorder would be the most persuasive source of prevention messages. Taken together these findings support the potential importance of prevention messages being delivered by sources who make clear that they have personally overcome body image disturbance.

***Intervention***

The present dissertation research also offers preliminary avenues for application in a psychotherapy context, both in terms of content and process considerations. In terms of therapeutic process, the findings of this dissertation suggest that therapist modeling of adaptive body image attitudes and behaviours may be important, regardless of the formal body image interventions used. This component may be particularly beneficial with clients who may find pursuing an adaptive relationship with their own body too threatening, i.e., when body image

distress is very acute, when there is high investment in controlling weight/shape. Furthermore, there may be additional benefit if the client is able to sense that the therapist has also experienced moments of body image distress and has learned how to cope adaptively. This may increase their sense of common humanity and connection with the therapist, as well as openness to the body image coping strategies the therapist recommends. Indeed, these findings support and elucidate the results of qualitative research on the impact of self-disclosure by recovered therapists in an eating disorder setting, which indicated that 97% of patients felt that the therapist's self-disclosure regarding having lived experience with an eating disorder has a positive impact on the therapy, with the most often cited advantages being 1) feeling greater empathy from the therapist, 2) feeling that there is greater equality and safety in the therapeutic relationship and 3) feeling that the therapist has enhanced insight and knowledge into eating disorders (Costin & Johnson, 2002; De Vos et al., 2016).

In terms of group interventions, results suggest that leveraging the group context for discussions aimed at exploring adaptive ways of relating to one's body may incur a super-additive effect on participants' body image. In the context of the treatment of eating disorders, current interventions targeting body image typically focus on reducing body image distress, by encouraging participants to eliminate body avoidance and body checking as well as modifying body-related cognitive distortions (Fairburn, 2008). At times, this may include challenging negative body cognitions with positive body image content (i.e., cognitive restructuring that includes focusing on body function rather than appearance). However, as previous research suggests, there may be benefit to including experiential interventions that specifically target aspects of positive body image that can co-exist with body dissatisfaction, such as body functionality and body image flexibility, given that decreased body dissatisfaction does not

necessarily increase positive body image (Tylka & Wood-Barcalow, 2010). My findings extend the practical implications of this research in suggesting that there may also be therapeutic value to having participants share their adaptive body image experiences with other group members, especially because people attending such groups are known to one another as having struggled with body image, which should make their experiences of adaptive coping more transmissible to others in the group. Our findings also provide an empirical basis for including a mentorship aspect in body image intervention programs (e.g., Beveridge et al., 2019; Ramjan et al., 2017; Perez et al., 2014), wherein individuals who have struggled with and recovered from an eating disorder and who have developed more positive body image may offer guidance and feedback to current patients regarding what helped them to do so.

**Limitations and Future Directions**

Although the limitations specific to each study have been outlined in their respective discussion sections, there are a number of general limitations common across all the studies in this dissertation. Firstly, the samples across all three studies were similar and homogenous in nature, in that they were comprised predominantly of young adult White and Asian female university students. Given that body image tends to be highly salient for this population, it would be important to know whether our findings would generalize to other populations for whom body image may be either less salient, or for whom the norms for body image attitudes and behaviours are different. For example, Martz et al. (2009) found that unlike women, men felt more social pressure to engage in self-accepting talk than other forms of body talk, thus it may be that the positive impact of hearing accepting and body positive talk may be mitigated if men are used to hearing it and/or feel that it is unacceptable to express moments of body image distress. Furthermore, there is virtually no research on interpersonal body image experiences of LGBTQ

individuals, which is a notable gap in the literature. Future research should endeavour to explore the present research questions in more diverse populations, as it is likely that interpersonal body image experiences may intersect with one's gender identity, sexuality or ethnicity in importantly different ways.

Additionally, it will be important to employ more longitudinal methods to understand the duration of the beneficial effects of exposure to displays of adaptive body image, as well as the impact of repeated exposures to others who display adaptive body image self-attitudes. In Studies 2 and 3, we observed momentary shifts in body image related to social exposure to a peer's reaction to body image distress; however, future research should examine how long the effects of such brief exposures last. Although Study 1 examined the association between exposure to body focused and non-body focused others over a week, this is still a relatively short timeframe. Furthermore, requiring participants to reflect on their social interactions, body image and eating each day may have alerted them to their body image related interactions, thus artificially increasing the magnitude of the observed effects. It would be important for future research to allow for more time between measurements in order to accurately characterize naturalistic changes over time as a function of the adaptive body image attitudes and behaviours to which individuals are exposed. In addition, when examining the impact of brief manipulations, follow-up measurements would reveal the sustainability of shifts in momentarily induced body image states.

Finally, to better leverage adaptive forms of social exposure, it will be helpful to know more about how the characteristics of others, beyond their body image, may influence the effects demonstrated in these studies. In Study 1, no information was collected on the characteristics of the individuals that participants interacted with each day. In studies 2 and 3, the characteristics of

the peer in the vignette that participants were exposed to was standardized across conditions such that all participants received the same information about the peer. To expand on the results of this dissertation it will be important for future research to capture how partner variables such as BMI, attractiveness, and closeness of relationship to the participant moderate these exposure effects.

**Conclusions**

The three studies presented in this dissertation represent, to my knowledge, the first attempts at quantitatively investigating how an individual's body image is impacted by exposure to adaptive body image in others. This set of studies used experimental and observational methods to characterize the role that exposure to adaptive body image attitudes and behaviours in others play in women's day-to-day body image experiences, as well as in their moments of acute body image distress. Findings highlight a range of beneficial body image outcomes associated with exposure to displays of adaptive body image by others, complementing and extending existing literature regarding the detrimental impact of social exposure to negative body image. Findings also provide support for the theoretical and clinical importance of considering the body image attitudes and behaviours displayed in one's social sphere in the development and maintenance of adaptive body image, and provide preliminary yet promising avenues for body image prevention and intervention efforts.

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# Appendix

## Study 2 Audio Clip Vignettes

***Self-Compassion Condition***

"Okay hmmm… well I went home for Thanksgiving a couple weeks ago and my family hosted a big Turkey dinner with all my extended family. I hadn't seen them in a while and I guess my grandfather noticed that I had gained some weight since going away to school cause when he hugged me he kinda jokingly said "seems like that meal hall food is treating you well! There's more of you than when I saw you last" and then later on in the night as I was going back for seconds of the pie he said "wow you can really pack it in eh?" I was pretty taken aback, cause he had never made comments like that before and it made me kind of pause and think about my body and eating habits more than I usually would. I started to remember how long it has been since I've been to the gym and the fact that most of my meals these past few months were probably lacking in the leafy greens and yeah I guess my jeans have gotten tighter lately as a result.

I was bothered by his comment for sure, but then I reminded myself that it's understandable to feel insecure or hurt when someone makes that kind of comment about me and that it would make pretty much anyone pause and examine their weight and eating if this happened to them. I also know a lot of my friends gained weight when they went away to university and struggling with that is super common. The freshman 15 isn't a catchphrase for nothing! I thought about it a bit more and realized that even if I've gained weight I can't go back and change my eating from the last couple months and I am going to accept my weight now given that fact. But I also realized that if I have gained weight it maybe means that I am not taking care of myself and my health as much as I'd want to. I made a commitment to myself at

that point that, rather than beat myself up and feel lousy about my weight gain, I'd start trying to incorporate more veggies into my diet next semester and do active things that I have always enjoyed but kind of fell by the wayside in the transition to university, like hiking and bike riding. I figure, as long as I focus on health as my long-term goal my weight will fall wherever is naturally best for me and if that means that I don't lose the weight I gained then that's okay too. I even bought myself a couple new pairs of jeans because it's important to me to feel comfortable regardless of whether I lose or gain weight. And it seems to be working so far. I don't really know my weight, but I definitely feel better and have more energy since eating more veggies, and I've started hiking a couple times a week. I'm glad that I was able to avoid getting wrapped up in negative feelings after my grandfather's comment, and be at peace with my weight whatever it is, and actually in the end I was able to make some positive changes for myself and my health."

***Self-Esteem Enhancement Condition***

"Okay hmmm… well I went home for Thanksgiving a couple weeks ago and my family hosted a big Turkey dinner with all my extended family. I hadn't seen them in a while and I guess my grandfather noticed that I had gained some weight since going away to school cause when he hugged me he kinda jokingly said "seems like that meal hall food is treating you well! There's more of you than when I saw you last" and then later on in the night as I was going back for seconds of the pie he said "wow you can really pack it in eh?" I was pretty taken aback, cause he had never commented on my weight before and it made me kind of pause and think about my body and eating habits more than I usually would. I started to remember how long it has been since I've been to the gym and the fact that most of my meals recently have probably been lacking in the leafy greens and yeah I guess my jeans have gotten tighter lately as a result.

I was bothered by his comment for sure. I was also kind of annoyed, cause like, making the transition to university is a big deal, there is a lot to adjust to and its stressful! So what if working out wasn't my first priority! As my granddad I feel like he could have been more understanding of that, cause like, those comments were really insensitive! But I didn't really feel guilty for not going to the gym anyway, cause like said, the university transition is a big one-I am such a busy person that I should feel accomplished for even thinking about working out at all! Besides, they say you only need to do a half hour of activity a day to stay healthy and I walk to school, so that totally counts as working out. The cafeteria at my school also does a really poor job of offering healthy meal options. Sure they have salad, but it's really the only healthy choice, and unless I wanna eat salad for every meal of the day, its all burgers and pizza. I also couldn't help but notice that my grandfather isn't exactly slim himself, so he is really in no position to be commenting on other people's weight. Plus even if my jeans are a bit tighter I still get compliments all the time on my appearance. My friends tell me all the time how much they wish they had my eyes and smooth skin.

Anyway, when I got back to university after Thanksgiving, I decided to go out and buy some new clothes that accentuate my good features-a dress that brings out the green in my eyes, a flowy shirt that kinda hides my tummy, but has a really cute collar to draw attention to my neckline. I also reminded myself that there are many people, even some of my friends who are bigger than I am and a lot of them try wayyy harder to diet and workout than I do so I obviously have a pretty good metabolism. And anyway looking like a Victoria's secret model is unrealistic anyway, they are all totally airbrushed. I'm glad I was able to remind myself of these things, because I think my grandfather was just being overly critical, and there really wasn't any reason for me to feel bad about my body or weight. That being said I have started going to the gym a

couple times a week. I know I'm not fat, and no one else has made any comments about my weight since then, and I'm still getting hit on at the bar all the time, so clearly I'm still attractive and look good in my clothes."

***Distraction/Control Condition***

"Okay hmmm… well I went home for Thanksgiving a couple weeks ago and my family hosted a big Turkey dinner with all my extended family. We are pretty close with the whole family, but this was the first time I had seen them since going away to university. Since I hadn't seen them in a while I guess my grandfather noticed that I had gained some weight since going away to school cause when he hugged me he kinda jokingly said "seems like that meal hall food is treating you well! There's more of you than when I saw you last" and then later on in the night as I was going back for seconds of the pie he said "wow you can really pack it in eh?" He had never made comments like that before and it made me kind of pause and think about my body and eating habits more than I usually would. I started to remember how long it has been since I've been to the gym and the fact that most of my meals these past few months were probably lacking in the leafy greens and yeah I guess my jeans have gotten tighter lately as a result. Living on campus means that I eat at the cafeteria a lot and they have all kinds of food options that are delicious, but probably not great for you, like pizza and burgers and ice cream and I kind of went crazy on those even though there were healthier options I could have chosen for sure like salads or wraps. So I guess my grandfather was right, I did gain some weight after going away for school.

His comments really made me self-conscious and embarrassed, though, and threw me off, even if they were maybe somewhat accurate. After dinner, I figured, if I can kinda take my mind off of it I will probably feel better, or even forget about it. I know I read somewhere on like the

internet or something that when you are feeling upset or worried or sad about something to try and totally distract yourself for at least a half hour by like playing outside or watching a favourite tv show. It's called a "worry time out" or something like that. Basically you are supposed to like just put your worry on hold for a half hour and go do something fun or interesting. After the half hour is up hopefully you've totally forgotten what you were upset about. So I decided to try that that night. I recently started watching Orange is the New Black on Netflix, so I figured a couple episodes of that would get me laughing and take my mind off of things. And it worked pretty well. I found a quiet corner to enjoy my show, and by the time I had watched like two or three episodes it was pretty late in the night, people were getting ready to leave and my grandfather's comment was no longer at the front of my mind."

**Study 3 Audio Clip Vignettes**

***Adaptive Coping Condition***

"Okay hmmm… well I went home for Thanksgiving a couple weeks ago and my family hosted a big Turkey dinner with all my extended family. I hadn't seen them in a while and I guess my grandfather noticed that I had gained some weight since going away to school cause when he hugged me he kinda jokingly said "seems like that meal hall food is treating you well! There's more of you than when I saw you last" and then later on in the night as I was going back for seconds of the pie he said "wow you can really pack it in eh?" I was pretty taken aback, cause he had never made comments like that before and it made me kind of pause and think about my body and eating habits more than I usually would. I started to remember how long it has been since I've been to the gym and the fact that most of my meals these past few months were probably lacking in the leafy greens and yeah I guess my jeans have gotten tighter lately as a result.

I was bothered by his comment for sure, but then I reminded myself that it's understandable to feel insecure or hurt when someone makes that kind of comment about me and that it would make pretty much anyone pause and examine their weight and eating if this happened to them. I also know a lot of my friends gained weight when they went away to university and struggling with that is super common. The freshman 15 isn't a catchphrase for nothing! I thought about it a bit more and realized that even if I've gained weight I can't go back and change my eating from the last couple months and I am going to accept my weight now given that fact. But I also realized that if I have gained weight it maybe means that I am not taking care of myself and my health as much as I'd want to. I made a commitment to myself at that point that, rather than beat myself up and feel lousy about my weight gain, I'd start trying to incorporate more veggies into my diet next semester and do active things that I have always enjoyed but kind of fell by the wayside in the transition to university, like hiking and bike riding. I figure, as long as I focus on health as my long-term goal my weight will fall wherever is naturally best for me and if that means that I don't lose the weight I gained then that's okay too. I even bought myself a couple new pairs of jeans because it's important to me to feel comfortable regardless of whether I lose or gain weight. And it seems to be working so far. I don't really know my weight, but I definitely feel better and have more energy since eating more veggies, and I've started hiking a couple times a week. I'm glad that I was able to avoid getting wrapped up in negative feelings after my grandfather's comment, and be at peace with my weight whatever it is, and actually in the end I was able to make some positive changes for myself and my health."

***Body Distressed Condition***

"Okay hmmm… well I went home for Thanksgiving a couple weeks ago and my family hosted a big Turkey dinner with all my extended family. I hadn't seen them in a while and I guess my grandfather noticed that I had gained some weight since going away to school cause when he hugged me he kinda jokingly he said "seems like that meal hall food is treating you well! There's more of you than when I saw you last" and then later on in the night as I was going back for seconds of the pie he said "wow you can really pack it in eh?" I was pretty taken aback, cause he has never made comments like that before and it made me kind of pause and think about my body and eating habits more than I usually would. I started to remember how long it has been since I've been to the gym and the fact that most of my meals these past few months were probably lacking in the leafy greens and yeah I guess my jeans have gotten tighter lately as a result.

I was bothered by his comment for sure. I was really shocked and embarrassed that my weight gain was noticeable enough for him to comment on. I was also hurt, and again pretty humiliated because he is my grandfather, and I kind of thought he wouldn't notice or care about that kind of thing. I felt really self-conscious the rest of the night."

***Body Contented Condition***

"Hmmm…talk about a situation that made you feel insecure about your body?...well actually…I'm not really sure. There may have been something at some point, but nothing specific is coming to mind right now. I've always been pretty confident in my body. Like I've always just kind of eaten what I want and don't give it too much thought, and like I know my weight probably changes a bit now and then around the holidays or if I haven't been very active, but I've never had to do anything extreme to fix it, like go on a big diet or something. And I've

never really had anyone like make mean or critical comments about my body, or like I said, not that I can remember right now. I'm not sure how I would react if they did…probably like…surprised? Offended? I don't know. I hope this doesn't come off as super cocky and conceited because it's not like that! It's just not something that I have had to really deal with in terms of my life so I guess I'm not really sure what to talk about. I guess when I signed up for the study I thought we'd just have to talk about our bodies and how we feel about them in general, not necessarily a specific situation that made us feel insecure. I mean…I'm trying to think if there are times or ways I feel insecure about my body…I mean like I said I've definitely never had people make negative comments about my body, and I'm not really on social media much, so I don't know, I just don't seem to be in situations that often that would like, bring up insecurities. My family is the same as me, like we just kind of do our thing, and whatever we look like is kinda what it is. And like obviously I know there is like pressure to look fit and whatever in the media and stuff, but day to day that doesn't really seem to come into play in my life. (Again, I feel so weird saying this, but it's true, and I honestly can't think of what else to talk about that is related to body image). I've never had to deal with really drastic weight gain or anything, my size has always been pretty stable. Like I guess in terms of body image I'd say I'm just like….comfortable, and it's nice. Like I don't spend a ton of time in front of the mirror in the morning trying on multiple outfits which I know some people have to deal with. And like food-wise I pretty much eat whatever I want. Like…for lunch I had pizza from the SLC and a brownie because I like to have to have something sweet at every meal. Like obviously some days I eat like healthier than others, more veggies or whatever but it's more based on what I feel like in the moment. I guess I'm not sure what else to say at this point-like I feel fine about my body and there isn't one situation that made it like really bad or anything, and I really like being able to

just kind of eat what I want and do what I want and not feel pressure one way or the other to like diet or exercise or feel super bad about my appearance all the time so…yeah, not sure what I'm doing exactly but I think whatever it is is working! Which is maybe not super helpful for this study  but I'm just really trying to kind of give my honest body image experience, so hopefully that's still useful!"