

From Competition to Caregiving:
Alleviating the Negative Effects of Appearance-Focused Social Comparisons

by

Kiruthiha Vimalakanthan

A thesis
presented to the University of Waterloo
in fulfilment of the
thesis requirement for the degree of
Master of Arts
in
Psychology

Waterloo, Ontario, Canada, 2016

© Kiruthiha Vimalakanthan 2016

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 is 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

As the first author of this thesis, I developed the research question, study design, and hypotheses. I selected all of the measures used in the study, and developed the original versions of the ‘self-help strategies’ used for the various interventions presented to participants during the experimental manipulation. I later refined these strategies with input from my supervisor, Dr. Allison Kelly. I set up and managed the study, collected data, and then organized and analyzed the data. I wrote drafts of the current thesis and revised them with feedback from Dr. Kelly.

Dr. Kelly played an important role throughout the course of study development and the writing of this document. She helped refine the study design and the self-help strategies, consulted on statistical analyses, and reviewed several drafts of this thesis.

Sarina Trac, an honours student, and Cecilia Allan, a research assistant, also helped to run the study and provided valuable feedback on study design.

Abstract

Social comparison theory (Festinger, 1954) suggests that individuals compare themselves to others in order to determine their standing in various life domains (e.g., wealth, intelligence, popularity). These social comparisons are especially common in the physical appearance domain, in which women frequently compare their appearance to that of other women, even when it becomes detrimental to their body image (Strahan et al., 2006). Applying Gilbert's (2000) social mentalities theory, which posits that individuals can adopt various mindsets in their interactions with others, this study used a novel intervention to investigate whether cultivating a caregiving mentality would alleviate the negative consequences of appearance-focused social comparisons. For 48 hours, 57 female undergraduates practiced one of three strategies when they made unfavourable appearance comparisons: cultivating feelings of compassion and loving-kindness toward the comparison target (Caregiving); comparing themselves favourably to the target in other domains (Competition); or distracting themselves (Control). The Caregiving condition tended to increase feelings of social safeness more than the other conditions. Furthermore, among women with higher baseline eating pathology, the Caregiving condition was more effective than the Competition condition at reducing body dissatisfaction and eating-disorder related comparison orientation. Similarly, among women with lower trait compassion, the Caregiving condition was more effective than the Competition condition at increasing feelings of social safeness and reducing eating disorder-related comparison orientation. Findings suggest that cultivating a compassion-oriented, caregiving mentality when threatened by appearance-focused social comparisons could help young women, especially those most vulnerable, to reduce the negative consequences tied to these comparisons and to improve feelings of social connectedness.

Acknowledgments

While the production of this thesis often felt like a strenuous personal journey, I would be remiss to consider myself to be alone in my efforts. To that end, I would like to extend my gratitude and appreciation to a number of individuals who have supported me through the process of developing and writing this thesis, as well as through the general undertaking of my graduate education thus far.

First and foremost, I would like to thank my supervisor Dr. Allison Kelly, whose tireless support and guidance has been indispensable not just in the completion of this thesis project, but also in my overarching efforts to navigate the complex world of academia. I could not ask for a better mentor than the one I have found in you.

I am also thankful to the former and current members of the Self-Attitudes Lab, who never failed to offer constructive feedback and warm words of encouragement in the course of study development. I am especially appreciative of Sarina Trac and Cecilia Allan, who devoted much of their time and care to helping me run this study.

I would like to thank my readers, Dr. David Moscovitch and Dr. Uzma Rehman, for their helpful feedback on this thesis.

Last but certainly not least, I am thankful to have had the support of my family and friends, without whom the last two years would have been considerably harder. In particular, I am incredibly grateful to A.S., F.B., and A.R.—thank you for indulging my procrastination, assuaging my thesis-induced anxieties, and making those late-night Thai Express runs.

Table of Contents

Author’s Declaration	ii
Statement of Contributions	iii
Abstract	iv
Acknowledgements	v
Table of Contents	vi
List of Figures	viii
List of Tables	ix
Literature Review and General Introduction	1
The Competitive Society: An Introduction to Social Comparison Theory	1
Body Dissatisfaction and Disordered Eating: The Costs of Appearance-Focused Social Comparisons.....	3
Social Mentalities Theory: A Novel Perspective	8
Practicing Compassion and Self-Compassion in a Competitive World.....	13
Choosing Compassion over Competition.....	15
The Present Study	18
Social Comparison Theory	18
The Costs of Appearance-Focused Social Comparisons.....	18
Social Mentalities Theory	20
Compassion vs. Competition.....	21
Study Objectives	24
Method	27
Overview of the Procedure.....	27
Participants	27
Measures.....	28
Procedure.....	33
Results	40
Analytic Strategy.....	40
Preliminary Analyses	41
Central Analyses	42
Discussion	46
Moderators of Intervention Effects	46
Intervention Effects on Changes in Social Safeness	48

Theoretical and Practical Implications	49
Limitations and Future Directions.....	50
Conclusions	52
References	54

List of Figures

<i>Figure 1.</i> Trait compassion moderates the effect of condition on social safeness.....	67
<i>Figure 2.</i> Baseline eating disorder symptomatology moderates the effect of condition on body dissatisfaction.....	68
<i>Figure 3.</i> Trait compassion moderates the effect of condition on eating disorder-related comparison orientation.....	69
<i>Figure 4.</i> Baseline eating disorder symptomatology moderates the effect of condition on eating disorder-related comparison orientation.....	70

List of Tables

<i>Table 1.</i> Correlations between Moderator and Dependent Variables at Baseline.....	66
---	----

Literature Review and General Introduction

The Competitive Society: An Introduction to Social Comparison Theory

Researchers have argued that humans are evolutionarily hard-wired to compete with each other (Alexander, 1990). Throughout time, we have competed for the fundamental resources required for survival, such as food, water, and territory; and in contemporary society, we compete in many more fields, such as sports, business, and politics. Competition is found at all levels of society—between nations, between rival groups or classes within a nation, and perhaps most ubiquitously, between individuals.

Social comparison theory (Festinger, 1954) posits that in order to determine one's standing in life's various domains, individuals will compare themselves against others. Social comparison theory distinguishes between two types of comparisons. In upward comparisons, individuals compare themselves to others whom they perceive to be superior in a given domain. For example, one might compare themselves to a neighbour in terms of wealth, and conclude based on house size and car makes that they were decidedly less wealthy than this neighbour; this would be an upward comparison. In downward comparisons, people compare themselves to others whom they perceive to be inferior in a given domain. For example, one might compare themselves to a friend on the basis of intelligence, and conclude based on academic performance that they were smarter than this friend; this would be a downward comparison. Consistent with Festinger's (1954) theorizing, the former type of comparison produces adverse consequences in the form of negative affect and decreased self-esteem (Morse & Gergen, 1970; Salovey & Rodin, 1984), while the latter type produces positive affect and boosts self-esteem (Gibbons, 1986; Hakmiller, 1966; Lemyre & Smith, 1985, Morse & Gergen, 1970).

The need to compare influences one's feelings of satisfaction with oneself in a variety of domains, such as wealth, intelligence, competence, popularity, and physical appearance (Emmons & Diener, 1985). For example, Van Yperen and Leander (2014) found that in one's self-evaluation of performance, social comparison information (i.e., information about one's performance relative to others) consistently overpowers temporal comparison information (i.e., information about one's current performance relative to one's previous performance) even if one's stated goal is mastery-based (e.g., to do better on a task than one had done before). In another study, increased income was found to increase life satisfaction only when income grew compared to peers of similar age, education level, or geographic region (Boyce, Brown, & Moore, 2010). One's happiness with oneself and one's circumstances is influenced considerably by whether one is keeping up with, or preferably, ahead of, one's peers.

This need to compare oneself to others can be adaptive. Under conditions of threat, downward comparisons are commonly employed in the pursuit of self-enhancement (Wills, 1981). For example, after doing poorly on an exam, one might compare themselves to classmates who have done even worse on that exam to enhance their sense of competence. When one experiences distressing life events, downward comparisons can serve as an important coping strategy: for example, Wood, Taylor, and Lichtman (1985) found that among a sample of women with breast cancer, downward comparisons made with other breast cancer patients on the basis of adjustment, physical status, and life circumstances (e.g., marital satisfaction, age) were overwhelmingly prevalent relative to upward comparisons or comparisons to similar others. Even upward comparisons can provide useful information in the pursuit of self-evaluation and self-motivation, and can be a source of hope and inspiration (Buunk, Collins, Taylor, Van Yperen, & Dakof, 1990; Collins, 1996; Helgeson & Taylor, 1993). For example, in working

towards a certain goal, individuals often put up images of others who have already achieved those goals, and compare their relative progress: aspiring athletes may put up posters of successful athletes that they admire and make regular upward comparisons to them in order to motivate themselves. Indeed, the practice of making comparisons, whether upward or downward, can serve various helpful functions.

However, while the competitive orientation that often underlies the practice of making social comparisons is a vital evolutionary force, for many it may come at a cost. The theorized increase of competitive behaviour in society has been proposed as an explanation (Gilbert, 1989) for the rising rates of psychopathology among Western societies (Murray & Lopez, 1996). Indeed, research has found higher rates of mental ill-health among more masculine, performance-oriented societies (e.g., Japan, Ireland) (Arrindell et al., 2004; Arrindell, Steptoe, & Wardle, 2003). It has been further posited that taking on a hierarchical perspective in which others are viewed as one's competitors, and engaging in competitive behaviour (e.g., social comparisons, striving to avoid inferiority) can be incredibly stressful, not only linked to feelings of insecurity and discontent, but also increasing vulnerability to depression and anxiety (Gilbert, McEwan, Bellew, Wells, & Mills, 2009).

Body Dissatisfaction and Disordered Eating: The Costs of Appearance-Focused Social Comparisons

Body dissatisfaction—in which one holds negative and dysfunctional beliefs about one's body (Garner, 2002)—is a phenomenon so widespread that it has long been known as “normative discontent” (Silberstein, Striegel-Moore, & Rodin, 1987; Spitzer, Henderson, & Zivian, 1999). It is also a major risk factor for the development and maintenance of disordered eating behaviour and eating disorders (Cash & Deagle, 1997; Corning, Krumm, & Smitham,

2006; Stice & Shaw, 2002), which are prevalent, harmful, and costly. Lifetime prevalence rates are currently 5-6% for women (Hudson, Hiripi, Pope, & Kessler, 2007), and eating disorders have the highest mortality rate of any mental disorder (Sullivan, 2002).

The pervasiveness of body dissatisfaction is especially concerning in light of the fact that the physical appearance domain is one in which competitive perspectives and behaviour are pervasive and even encouraged, especially among women (Jackson, 1992). Within the gamut of competitive behaviour seen in contemporary society, appearance-focused upward social comparisons—that is, comparing oneself unfavourably to another on the basis of physical appearance—can be particularly insidious (e.g., Myers & Crowther, 2009). Such comparisons can be toxic in an arena in which the illusory concept of the “thin-ideal” presents itself as the ultimate comparison standard for the women of Western society. The thin-ideal refers to an unrealistically thin body type perpetuated as a rigid standard of beauty by mass media, often in airbrushed magazine covers and public advertisements (Dohnt & Tiggemann, 2006; Rodin & Striegel-Moore, 1984; Thompson & Stice, 2001). The appearance-focused behaviours and conversations of family members and peers—for example, discussing weight loss or dieting behaviours—may also endorse the thin-ideal (Dohnt & Tiggemann, 2006; Lev-Ari, Baumgartner-Katz, & Zohar, 2014a). Despite the troubling indications that the thin-ideal is increasingly at odds with the average woman’s body (MacNeill & Best, 2015), comparisons to this unattainable standard make it a powerful contributor to elevated levels of body dissatisfaction and disordered eating in Western women (Dohnt & Tiggemann, 2006; Groesz, Levine, & Murnen, 2001; Low et al., 2003; Stice, 2002).

However, the thin-ideal, as pervasive as it is, is not the only trigger of appearance-focused social comparisons. Research suggests that for women, body satisfaction can be

significantly undermined not just by upward comparisons to thin-ideal espousing celebrities and models, but by a single thin peer (Lin & Kulik, 2002). Comparisons made to close others (i.e., family and peers) have been shown to greatly influence women's idea of the ideal body, and may contribute to the development of body dissatisfaction. In fact, in the appearance domain, some studies have found that the upward comparison target most detrimental to women's body image is their best friend (Lev-Ari, Baumgarten-Katz, & Zohar, 2014a; Lev-Ari, Baumgarten-Katz, & Zohar, 2014b). Given the plethora of opportunities in one's daily life to make such comparisons, this is hardly a negligible source of body dissatisfaction.

Indeed, a meta-analysis by Myers and Crowther (2009) showed that a high frequency of appearance-focused social comparisons was related to higher levels of body dissatisfaction, and that this relationship was stronger for women. These findings are unsurprising, given that women are more likely to feel evaluated exclusively on the basis of their physical appearance—that is, women commonly experience the feeling of being treated and valued by others as nothing but a physical body (Fredrickson & Roberts, 1997). Women are also much more likely to make upward comparisons in the appearance domain (Morrison, Kalin, & Morrison, 2004). In summary, the appearance domain is one in which women are virtually set up to experience dissatisfaction by making more social comparisons that leave them feeling unhappier.

The mechanics of appearance-focused upward social comparisons are perhaps most troubling in their points of divergence from key tenets of social comparison theory. First, although Festinger (1954) posited that individuals are more likely to compare themselves to relevant or similar others, women frequently make unfavourable appearance comparisons to media representations of the thin-ideal who would qualify as dissimilar others, given their unrealistic standards (Groesz et al., 2002; Engeln-Maddox, 2005; Myers & Crowther, 2009;

Strahan, Wilson, Cressman, & Buote, 2006). Second, although Festinger argued that individuals will stop making upward comparisons if they become generally unfavourable or detrimental to their self-image, research in the body image domain suggests otherwise. Although the practice is not only fruitless but also harmful, women frequently continue to make appearance-related social comparisons (Strahan et al., 2006) and make more unfavourable than favourable appearance comparisons (Leahey, Crowther, & Mickelson, 2007).

Even more disconcerting is that these comparisons are costliest to those who are already high in body dissatisfaction and/or eating pathology. Groesz and colleagues (2002) found that the increase in body dissatisfaction that can result from exposure to thin-ideal images is significantly stronger for women who are already high in body dissatisfaction. In a daily diary study using Ecological Momentary Assessment (EMA) to investigate the effects of naturally occurring appearance-focused social comparisons, Leahey and colleagues (2007) found that women who were high in body dissatisfaction made more comparisons and a greater proportion of upward comparisons than women who were low in body dissatisfaction. Furthermore, these upward comparisons were linked to an increase in negative affect and body dissatisfaction not just in general but on a daily basis. In another EMA study, Leahey, Crowther, and Ciesla (2011) found that even among women who were high in body dissatisfaction, upward comparisons were most harmful to women who also had eating pathology, showing greater links to negative affect, guilt, and thoughts of dieting. Appearance-focused upward social comparisons have also been linked to the maintenance of eating disorders. Relative to a control group, patients with bulimia nervosa were found in one study to fixate longer on comparison bodies with lower body mass indices (BMIs), while they fixated for less time on high BMI comparison bodies. Furthermore, these upward comparisons to those with lower BMIs were also associated with a drop in body

satisfaction among the patient group, but this drop was not seen in the control group (Blechert, Nickert, Caffier, & Tuschen-Caffier, 2009). In the appearance domain then, upward comparisons can be seen to perpetuate a virtual cycle of discontent, making women who are already unhappy with their bodies unhappier.

In non-appearance domains, downward comparisons have been shown to have protective effects on women's body satisfaction: women high in body dissatisfaction instructed to make downward comparisons to models in non-appearance domains such as relationships, intellect, and personality experienced more positive changes in body satisfaction than a control group (Lew, Mann, Myers, Taylor, & Bower, 2007). However, little research has examined the effects of engaging in downward comparisons in the appearance domain—for example, seeking out less attractive others against whom to compare oneself, or looking for particular physical features (i.e., skin, hair) on which one is more attractive than a thinner peer. While a few studies (Bailey & Ricciardelli, 2010; Martin & Gentry, 1997; van den Berg & Thompson, 2007) have shown these comparisons to be associated with higher levels of body satisfaction for women, others suggest that downward comparisons in the appearance domain do not always seem to have the compensatory, elevating effects that they provide in other domains (Lin & Kulik, 2002; Rancourt, Schaefer, Bosson, & Thompson, 2016), and that they may even be detrimental to body image and eating behaviour (Lin & Soby, 2016). In other words, in a crucial departure from social comparison theory, there may exist an asymmetry in the appearance domain such that upward comparisons make women feel worse about their bodies, while downward comparisons in this domain do not always necessarily offset these effects by making women feel better about their bodies. The latter may be especially true for women who are already vulnerable, for whom

downward comparison targets and/or physical features may be hard to come by, and for whom any effects of downward comparisons may be short-lived (Leahey et al., 2011).

Social Mentalities Theory: A Novel Perspective

Insofar as social comparison theory fails to adequately explain the full nature of comparisons in the physical appearance domain, with downward comparisons failing to consistently alleviate the adverse consequences of women's appearance-focused upward comparisons, a need arises for alternate perspectives from which to understand and intervene with women's maladaptive tendency to engage in unfavourable body comparisons. I propose that this need may be addressed through the lens of Gilbert's (1989, 2000) social mentalities theory.

Social mentalities theory posits that individuals can adopt various mentalities, or mindsets, to guide their interactions with others. Gilbert (2000, p.120) states that "a social mentality acts to generate *patterns* of cognition, affect, and behaviour into meaningful sequences that allow for the enactment of social roles" (e.g., caring, sexual, competitive). These roles require both a system for detecting signals from others (i.e., to read others' emotions and intentions and work out what role they are trying to impose) and a system for sending signals to others (i.e., to communicate what social role one is enacting—for example, acting as an ally vs. a competitor) (Gilbert, 2005). Based on the mentality being pursued, "the self" is construed in one way (e.g., care-giving, dominant), while "the other" is construed in another (e.g., care-seeking, subordinate). Different social mentalities organize our minds in different ways and are embedded in various innate motivation systems, and as a result, how we react to social events and/or interactions with others is contingent upon the social mentality we have adopted. To provide an example, Gilbert (2014) describes that seeing another person cry might be a personally

pleasurable experience if one's current mindset is oriented towards outperforming or hurting them, but a distressing one if one's current mindset is oriented towards caring for them.

Gilbert (2005) identifies the following as what he considers to be some of the more important archetypal social mentalities: care-eliciting, care-giving, formation of alliances, social ranking, and sexual.

- 1) A *care-eliciting* mentality directs individuals to form a relationship with another who can offer protection and the necessary investment for survival (and in mammals, emotional regulation). It addresses the social challenge of having to provide for and regulate threats to oneself, especially early on in life. In adopting such a mentality, one is oriented towards evaluating proximity to the other, making distress calls, searching for the other, and being responsive to their signals of care-giving.
- 2) A *care-giving* mentality directs individuals to form a relationship with another in order to invest resources such as time and energy that increase their chances of survival, growth, and reproduction. It addresses the social challenge of threat to young or vulnerable kin and allies. In adopting such a mentality, one is oriented towards responding to distress and evaluating and meeting the needs of the other; in humans, empathy and sympathy are also enacted as part of this mentality.
- 3) A *formation of alliances* (i.e., cooperative) mentality directs individuals to form a relationship with another for cooperation. It includes the inhibition of aggression, sharing-exchange, affiliation, friendships, group living, and reciprocal behaviour. It addresses the social challenge of infighting, instead allowing for collaboration to solve problems of survival. In adopting such a mentality, one is oriented towards making judgments about who is similar to oneself, who is included or excluded from

a group, and who may be a good ally; in humans, this mentality also involves an orientation towards reciprocation, equity, fairness, and rights.

- 4) A *social ranking* (i.e., competitive) mentality directs individuals to form a relationship with another in which one is concerned with one's relative rank or status relative to another. It can lead the individual to directly compete for resources, to choose behaviours that will increase and maintain rank/status (e.g., dominance/leader), to concede to those of higher rank/status (e.g., submission/follower), and to compete for selection by others in certain roles (e.g., mate, ally, leader). It addresses the social challenge of infighting, instead promoting social cohesion. Importantly, in humans, social rank is thought to depend more on one's social attractiveness (e.g., popularity, looks, intelligence, wealth) than one's physical strength.
- 5) A *sexual* mentality directs individuals to form a relationship with another for sexual behaviour. This includes attracting and being attracted to others, courting, conception, and retention of mates. Strategies and combinations of emotions and motives might differ based on whether the goal involves short-term or long-term sexual bonds.

Importantly, one's predisposition to adopt or eschew certain social mentalities can be shaped by early experiences, especially those of safeness and threat. For example, Gilbert (2005) suggests that our potential for warmth and compassion, elements of the care-giving mentality, emerges not only from our temperament, but also from our experiences of warmth and care from others. In our early social world, others (usually caregivers) in our environment may create a sense of safeness, offer warmth and validation, and instil in us a sense of being capable of liked or loved; consequently, one may become oriented towards seeking out others with whom to enact cooperative and affiliative strategies. However, if one's caregivers fail to create this sense

of safeness or offer warmth, and instead instil a sense of threat or shame, the consequences may be under-stimulation of one's positive affect and warmth systems, and over-activation of one's threat-defence systems (Perry, Pollard, Blakley, Baker, & Vigilante, 1995). A child who grows up in such an environment may therefore come to see the world as a dangerous place (Gilbert, 2005).

Individuals without this internalized sense of warmth, who may feel un-liked or unloved by others, can often become highly competitive and rejection-sensitive, overly oriented towards striving or making attempts to 'earn' their place (Gilbert, 2004, 2005). The social mentality that is typically deployed to cope with the frequent social threats perceived in such an individual's world is the competitive mentality. This is not to say, however, that people from insecure or difficult early environments necessarily lack the capacity for warmth or compassion, or that all individuals who are securely attached turn out to be warm and compassionate; indeed, there are many influences aside from our early environment that can activate our social mentalities—such as genes, temperament, and later experiences in life (Gilbert, 2005). However, adopting a care-giving or care-seeking mentality may be a foreign and even scary practice for many of these individuals from insecure early environments, and a competitive mentality is likely to feel safer.

Within the framework of Gilbert's (2000) social mentalities theory then, when individuals make social comparisons, they are adopting a competitive mindset, in which the self and other are ranked relative to each other (i.e., superior/inferior) in a given domain. As discussed earlier, while such a mindset can serve various functions (i.e., accurate self-evaluation, self-enhancement) (Wood, 1989) and be evolutionarily adaptive in helping individuals gather information about their rank relative to others to in turn guide their behaviour, it also has many downsides and its perpetual activation is associated with increased mental ill-health (Arrindell et

al., 2003; Arrindell et al., 2004; Gilbert, 1989; Murray & Lopez, 1996). I suggest that the unfavourable upward social comparisons that drive body dissatisfaction may be underpinned by such a competitive mindset.

Preliminary research has shown associations between various features characteristic of a competitive mindset and disordered eating, appearance anxiety, and drive for thinness (Bellew, Gilbert, Mills, McEwan, Gale, 2006; Pinto-Gouveia, Ferreira, & Duarte, 2012). Indeed, a study by Pinto-Gouveia and colleagues (2012) found links between the following elements of the competitive mentality,—namely, external shame (i.e., believing that one is negatively evaluated by and disdained by others), upward appearance comparisons (i.e., feeling inferior to others on the basis of appearance), and insecure striving (i.e., feeling constantly pressured to compete with others to avoid inferiority)—and further found that these elements predict body dissatisfaction and can lead to drive for thinness among women from the general population as well as those with eating disorders. Finally, being overly dependent upon a competitive mindset can be especially detrimental for a species such as ours for whom feelings of safeness and well-being evolved to require compassion, connection to, and acceptance and inclusion from others (Baumeister & Leary, 1995; Bowlby, 1969/1982). Even when the focus is on one’s relatively superior qualities, as in downward comparisons, such a strategy, when relied upon almost exclusively, maintains a competitive orientation in one’s relationships with others that can lead to divisiveness and hostility; and one’s sense of self-worth becomes tied to putting other people down.

To that end, Gilbert’s (2005) conceptualization of a caregiving, compassion-based mentality may be a promising alternative from which we can intervene with people’s tendency to approach others with a competitive mentality more generally and with women’s maladaptive

tendency to engage in unfavourable body comparisons more specifically. In line with Bowlby's (1969/1982) theories, Gilbert (2005) suggests that the human capacity to be compassionate is evolutionarily hard-wired, arising from human motivation to care for offspring. In addressing potential threats to young or vulnerable kin and allies, the caregiving mentality orients individuals towards forming relationships with others to invest resources (e.g., time, energy) that increases the likelihood of successful survival and reproduction. One is oriented towards responding to distress and evaluating and fulfilling the other's needs. Evoking such a mentality can promote secure and enduring forms of well-being that are not contingent on viewing others as inferior (Gilbert, 2005). When this mindset is adopted, individuals are motivated by compassion rather than competition, and seek to support and connect with others (Gilbert, 2005, 2010). This mentality may therefore be a helpful antidote to the competitive mentality that underpins harmful appearance comparisons.

Practising Compassion and Self-Compassion in a Competitive World

Compassion has been defined in various ways, but a recent review of definitions suggests that it is “a cognitive, affective, and behavioural process consisting of the following five elements that refer to both self- and other-compassion: 1) Recognizing suffering; 2) Understanding the universality of suffering in human experience; 3) Feeling empathy for the person suffering and connecting with the distress (emotional resonance); 4) Tolerating uncomfortable feelings aroused in response to the suffering person (e.g., distress, anger, fear) so remaining open to the accepting of the person suffering; and 5) Motivation to act/acting to alleviate suffering” (Strauss et al., 2016, p. 19).

The evidence for the benefits of compassion are overwhelming in the literature. Giving or feeling compassion has the capacity to buffer the effects of stress on well-being by cultivating

psychological resilience and increasing adaptive profiles of reactivity to stress (Cosley, McCoy, Saslow, & Epel, 2010; Poulin, Brown, Dillard, & Smith, 2013; Seppala, Hutcherson, Nguyen, Doty, & Gross, 2014). It has been shown to induce significant changes in fostering social connection: Hutcherson, Seppala, and Gross (2008) found in a lab study that compared to a closely-matched control task, a brief 7-minute loving-kindness meditation exercise in which one directs compassion and wishes for well-being towards real or imagined others increased feelings of social connection and positive affect towards strangers both implicitly and explicitly. It also has a powerful influence on physical health (Brown, Nesse, Vinokur, & Smith, 2003; Konrath, Fuhrel-Forbis, Lou, & Brown, 2012): one study examining the mortality risk among volunteers and non-volunteers found that volunteers who were truly motivated by compassion were at lower risk for mortality 4 years later, especially if they volunteered regularly and frequently (Konrath et al., 2012).

Compassion is also incredibly beneficial in its ability to foster self-compassion (Hermanto & Zuroff, 2016). Self-compassion is an unconditional form of positive self-regard that involves the tendency to respond to personal suffering and inadequacies with: kindness rather than judgment; a mindful attitude rather than one of over-identification; and the view that suffering is a common human experience rather than an isolating one (Neff, 2003a). Meanwhile, Gilbert (2005) conceptualized self-compassion as a form of self-to-self relating, in which one's care-giving mindset is activated to attend to one's own signals of distress. The link between compassion for self and compassion for others has been established in a variety of cross-sectional, brain imaging, and experimental studies (Crocker & Canevello, 2008; Longe et al., 2010; Neff & Beretvas, 2013). In a study examining the antecedents of self-compassion, Hermanto and Zuroff (2016) found that individuals who displayed a combination of high care-

seeking and high caregiving tendencies had the highest levels of self-compassion. Higher levels of self-compassion have also been found to be related to higher levels of other-focused concerns such as perspective-taking and forgiveness (Neff & Pommier, 2013). Another study found that the act of recalling memories of providing support to others, and actually providing care in a lab task, increased state self-compassion (Breines & Chen, 2013). In other words, the research suggests that one's ability to relate compassionately to others is fundamentally linked to one's ability to relate compassionately to oneself.

Choosing Compassion over Competition

The intent of the present review is not to vilify the competitive mindset, or the practice of making social comparisons. After all, the competitive mentality evolved to serve important functions indirectly conducive to survival and reproductive success. Like other social mentalities, it serves to help people problem-solve important social challenges—in this case, aiding in gathering information about one's rank relative to others, and in guiding one's behaviour in social hierarchies, competing for things one needs or wants such as mates or resources.

However, as discussed above, when individuals become overly dependent upon a competitive orientation, or even exclusively reliant upon it, this competitive, rank-focused mentality can start to become a costly perspective to hold. I believe this to be especially true for women who make social comparisons in the appearance domain: they continue to make appearance-related social comparisons—and consequently, remain in a competitive mentality—even when the practice becomes futile, or worse, detrimental to their well-being. In effect, within the appearance domain, I suggest that many women, especially those who are already unhappy with their bodies, are virtually stuck in this competitive mindset, and thereby remain in a

perpetual cycle of discontent where they become even unhappier. More alarmingly, there is evidence of an asymmetry in the appearance domain such that after experiencing the negative consequences of having made upward comparisons, remaining in a competitive mentality to make oneself feel better by using downward comparisons (as social comparison theory might typically suggest) does not provide emotional relief, especially for women who are already dissatisfied with their bodies.

Even when one is able to successfully cope with social threats using downward comparisons, the persistent use of such a strategy is still in keeping with an orientation that is often based on disunity and antagonism, and as a result can be toxic to oneself and one's relationships with others. Effectively, in relying upon a competitive mentality, in order to preserve or increase one's own sense of self-worth, one pays the price of putting others down. This can be incredibly harmful for a social species such as ours, for whom secure forms of well-being are drawn from feeling connected with others, and accepted and valued by others. Furthermore, within the appearance domain, where women often tend to compare themselves not only to media models and strangers, but also to those closest to them in their social environment, the people serving as targets for the divisive and often hostile thoughts associated with social comparisons are most likely to be family members and peers—people that one cares about and from whom distancing oneself will inevitably have social and emotional costs. Finally, in a world where others are indiscriminately viewed as competitors, one's social environment can come to be seen as a very threatening place, making feelings of safeness and well-being elusive.

Given its evolutionary social function of orienting the individual towards caring for others, taking on a caregiving mentality appears to be a promising way to counteract the perils of reliance upon the competitive mentality. Importantly, in switching from a competitive mindset to

a care-giving mindset, one is able to shift the focus away from constantly taking stock of and ranking others as competitors who are superior or inferior to oneself—especially one’s loved ones. The caregiving mentality, which is built upon empathy and attention to the needs of others, will be able to promote rather than undermine one’s relationships with close others. This shift may also lessen the sense of threat felt in one’s social environment, instead promoting a sense of safeness.

Furthermore, research suggests that the construct of compassion, which underlies the caregiving mentality, can in itself be extremely beneficial to one’s physical and mental well-being. In addition to buffering the effects of stress and lowering mortality risk, providing compassion to others can cultivate psychological resilience and foster social connection. One’s ability to provide compassion to others is also linked to provide self-compassion.

Although the effects of cultivating compassion towards others have been studied in terms of physical and mental health, little research to date has examined the effects of cultivating compassion for others on one’s body image or one’s tendency to make social comparisons. In the present research, I examine whether the cultivation of compassion—and by extension, the caregiving mentality—may be an invaluable resource for women struggling to break the aforementioned “cycle of discontent” perpetuated by the competitive mentality they tend to rely on in the appearance domain.

The Present Study

Social Comparison Theory

Social comparison theory (Festinger, 1954) proposes that individuals compare themselves to others to determine their standing in life's various domains. These comparisons can be upward, in which the other is perceived to be superior in a given domain, or downward, in which the other is perceived to be inferior in a given domain. Downward comparisons generally produce positive affect and boost self-esteem (Gibbons, 1986; Hakmiller, 1966; Lemyre & Smith, 1985, Morse & Gergen, 1970). They often assist in one's efforts for self-enhancement in the face of social threats (Wills, 1981), and can serve as an important coping strategy in one's adjustment to distressing life events (Wood et al., 1985). Although upward comparisons generally produce adverse consequences in the form of negative affect and decreased self-esteem (Morse & Gergen, 1970; Salovey & Rodin, 1984), they can provide useful information about how one should evaluate oneself in a given domain, and can sometimes be a source of self-improvement and motivation (Buunk et al., 1990; Collins, 1996; Helgeson & Taylor, 1993).

The Costs of Appearance-Focused Social Comparisons

The physical appearance domain is one in which the practice of making social comparisons is prevalent and even encouraged, especially among women (Jackson, 1992). Although in non-appearance domains, comparing oneself to others can be beneficial (Buunk et al., 1990; Collins, 1996; Helgeson & Taylor, 1993; Wood et al., 1985), there is very little evidence to this effect in the realm of physical appearance. For women in particular, a high frequency of appearance-focused social comparisons is strongly related to higher levels of body dissatisfaction (Myers & Crowther, 2009). Women are also much more likely to make upward

appearance-focused comparisons than men (Morrison et al., 2004), and to feel distressed and body-dissatisfied after they make them (Strahan et al., 2006).

Contrary to what social comparison theory would predict, women often continue to make appearance-focused social comparisons when the practice becomes unrewarding and even detrimental to their body image (Strahan et al., 2006). Research also suggests that these comparisons are costliest to those who are already high in body dissatisfaction and/or eating pathology (Groesz et al., 2002; Leahey et al., 2011). Compared to those lower in body dissatisfaction, women who are higher in body dissatisfaction make a higher number of and greater proportion of upward comparisons; these comparisons are also linked to increases in negative affect and body dissatisfaction (Leahey et al., 2007). Upward comparisons in this domain are also implicated in the maintenance of eating disorders (Blechert et al., 2009). In the appearance domain then, upward comparisons appear to be making women who are already unhappy with their bodies unhappier.

A natural question then becomes, how to intervene with these comparisons and the distress they cause. Within the framework of social comparison theory, an obvious idea would be to encourage women to make more downward comparisons. These could take the form of finding less attractive women with whom to compare oneself and/or finding domains in which one is superior to one's attractive comparison target. While some studies have found that downward comparisons made in both appearance and non-appearance domains can have protective effects on body satisfaction (Bailey & Ricciardelli, 2010; Lew et al., 2007; Martin & Gentry, 1997; van den Berg & Thompson, 2007), others suggest that in the appearance domain, downward comparisons do not always provide the uplifting effects that are seen in other domains (Lin & Kulik, 2002; Lin & Soby, 2016; Rancourt et al., 2016). For example, in one study that

exposed women to different images of peers as comparison targets in a “dating game” scenario, those presented with the image of a thin peer experienced a reduction in body satisfaction and confidence, while those presented with the image of an oversized peer experienced no compensatory effects on body satisfaction and confidence (Lin & Kulik, 2002). Another study by Lin and Soby (2016) goes even further in suggesting that downward comparisons may be detrimental to body image. The authors found that women who frequently made downward appearance comparisons were more likely to show an increased drive for thinness and dietary restraint, and that those who engaged in *both* upward and downward appearance comparisons endorsed more maladaptive body image concerns and behaviours relative to women who only made comparisons in one direction. In conclusion, and contrary to what social comparison theory would predict, the strategy of facilitating downward appearance comparisons may have limited success in alleviating body dissatisfaction (Leahey et al., 2011), suggesting a need for new theoretical perspectives from which to approach the problem of recurrent and harmful appearance comparisons.

Social Mentalities Theory

We propose that Gilbert’s (1989, 2000) social mentalities theory may be a promising new lens from which to understand and intervene with women’s maladaptive tendency to engage in unfavourable appearance-focused social comparisons. This theory postulates that individuals can adopt various mentalities, or mindsets, in their interactions with others. These different mentalities are thought to guide the formation of relationships that further the evolutionary goals of survival and reproduction. These include relationships based on care-giving/care-seeking, cooperation and reciprocity, dominance/submissiveness, and sex. Each mentality serves to organize one’s mind in a specific way, triggering certain patterns of attention, thinking, feeling, and

behaving that allow for the enactment of these different evolutionarily important relationships (Gilbert, 2000, 2005). Based on the social mentality one adopts, “the self” is construed in one way, for example as care-giving or dominant, while “the other” is construed in another, for example, as care-seeking or subordinate. As a result, one’s approach and reaction to interactions with others depend upon the social mentality adopted at the time. For example, seeing another person suffer might be a pleasurable experience if one’s current mindset is oriented towards competing with them, but a distressing experience if one’s current mindset is oriented towards caring for them (Gilbert, 2014).

Compassion vs. Competition

Relevant to social comparisons, Gilbert (2000) proposed that a social ranking or competitive mentality orients individuals towards appraising their rank or status relative to another, and towards basing their behaviours – for example, whether to dominate or submit – upon this appraisal. From this mentality, others are seen as competitors for desired, limited resources (e.g., food, mates). Adopting the framework of social mentalities theory, then, individuals making social comparisons—be these upward or downward—are in a competitive mindset: the focus is on ranking oneself relative to others as either superior or inferior.

When individuals feel insecure in their social environments—as many body-dissatisfied women tend to do—there is evidence that they can become more rank-focused (Gilbert et al., 2009b), which is consistent with the link between frequency of appearance comparisons and body dissatisfaction (Myers & Crowther, 2009). Preliminary research also suggests that individuals who endorse a more competitive mindset have more disordered eating and a higher drive for thinness (Bellew et al., 2006; Pinto-Gouveia et al., 2012). We suggest that even when making regular downward comparisons, where the focus is on one’s relatively superior rank in a

given domain, one maintains a competitive orientation with the people in one's environment. This orientation may lead not only to body dissatisfaction but also to disunity and antagonism; and one's sense of self-worth is effectively tied to putting others down. An overreliance on the competitive mentality can therefore be psychologically, socially, and physically harmful.

We therefore propose that rather than intervening with recurrent upward comparisons by encouraging downward comparisons, which would perpetuate a competitive orientation, it may be more advantageous to shift people to a different mindset altogether. Specifically, Gilbert's (2005) conceptualization of a caregiving, compassion-based mentality, may be a promising alternative and antidote to the perils of dependence upon the competitive mentality, especially in the appearance domain. Consistent with Bowlby's (1969/1982) work, Gilbert (2005) posits that the human capacity to be caring and compassionate is evolutionarily hard-wired, arising from one's motivation to care for offspring. When individuals take on a caregiving mentality, they seek to support and connect with others rather than trying to establish their relative rank as they would in the competitive mentality; others are seen as fellow human beings who are similar to self in their experiences of suffering and desires to be happy (Gilbert, 2005, 2010).

There is a large body of evidence documenting the benefits of activating a caregiving mentality. For example, the Buddhist tradition of loving-kindness meditation (Salzberg, 1995), rooted in loving-kindness, which Salzberg (2011) describes as "a quality of the heart that realizes how connected we all are...a form of inclusiveness of caring," (p. 178) encourages its practitioners to direct well-wishes toward a range of individuals. This approach, which is likely rooted in the caregiving mentality, has yielded a plethora of psychological and even physical benefits. Studies suggest that it can increase positive affect, promote resilience, and foster feelings of social connection even towards strangers (Fredrickson, Cohn, Coffey, Pek, & Finkel,

2008; Hutcherson et al., 2008; Seppala et al., 2014). One study by Fredrickson and colleagues (2008) showed that, over time, the practice of loving-kindness meditation produced increases in daily positive affect, which led to gains in personal resources such as increased mindfulness, more positive social relationships, and better physical health; these gains in turn increased life satisfaction and decreased depressive symptoms. In another study, patients with chronic low back pain who were taught loving-kindness meditation in an 8-week program reported reductions in pain, anger, and psychological distress, while a comparison group receiving standard care showed no changes (Carson et al., 2005).

Research has also overwhelmingly shown that compassion, another key output of the caregiving mentality, is beneficial to physical and mental well-being. According to a recent review of definitions and measures of compassion, compassion is “a cognitive, affective, and behavioural process consisting of the following five elements that refer to both self- and other-compassion: 1) Recognizing suffering; 2) Understanding the universality of suffering in human experience; 3) Feeling empathy for the person suffering and connecting with the distress (emotional resonance); 4) Tolerating uncomfortable feelings aroused in response to the suffering person (e.g., distress, anger, fear) so remaining open to the accepting of the person suffering; and 5) Motivation to act/acting to alleviate suffering” (Strauss et al., 2016, p. 19). Cultivating compassionate feelings and/or providing compassion-motivated help for others can lower mortality risk, cultivate psychological resilience, buffer the effects of stress, and foster social connection with others (Brown et al., 2003; Cosley et al., 2010; Hutcherson et al., 2008; Konrath et al., 2012; Poulin et al., 2013; Seppala et al., 2014). Compassion is also powerful in its ability to foster self-compassion (Breines & Chen, 2013; Hermanto & Zuroff, 2016; Neff & Pommier, 2013), which is the tendency to respond to personal distress with care and support (Gilbert, 2005;

Neff, 2003a). Self-compassion is an important contributor to well-being (Zessin, Dickhäuser, & Garbade, 2015) and is associated with fewer body image concerns and greater body image acceptance (e.g., Albertson, Neff, & Dill-Shackleford, 2015; Braun, Park, & Gorin, 2016; Kelly, Vimalakanthan, & Carter, 2014; Kelly, Vimalakanthan, & Miller, 2014).

Although there are well-documented benefits to cultivating a caregiving orientation toward others, no studies to our knowledge have examined the effects of this approach on body image. We suggest that activation of the caregiving mentality may halt the “cycle of discontent” perpetuated by the competitive mentality, which appears to be a commonly-adopted mindset in the appearance domain. By learning to shift from the competitive mindset to the caregiving mindset, women may be able to reduce their vigilance toward and constant tracking of their perceived rank in the appearance domain. This shift may also decrease the sense of threat that women may feel in their social environment, promoting social safeness—a sense of feeling warm, safe, and connected with others in one’s social environment (Gilbert et al., 2009a)—rather than competition with others. The overall consequences of this shift should include a decrease in social comparisons and body dissatisfaction, and an increase in feelings of social safeness. In general, this shift may promote more secure and enduring forms of well-being than those that those that are rooted in comparing oneself to others (Gilbert, 2005, 2010).

Study Objectives

The present study’s primary objective was to investigate the effectiveness of adopting a caregiving mindset in alleviating the body dissatisfaction and other negative consequences that may result from making appearance-focused social comparisons. To do so, we randomly assigned college women to one of three brief interventions that involved practicing a particular strategy each time they made an unfavourable appearance comparison over a 48-hour window. In

the Caregiving condition, women were taught to cultivate feelings of compassion and loving-kindness toward their comparison targets; in the Competition condition, women were asked to make downward comparisons to their target on other domains; and in the Control condition, women were asked to distract themselves with a counting task, which would allow us to rule out the possibility that general cognitive engagement post-comparisons accounted for outcomes.

We hypothesized that after 48 hours of practicing their assigned strategy, women in the Caregiving condition would, relative to women in the Competition or Control conditions, report: 1) less body dissatisfaction; 2) fewer comparisons related to their body, eating, or exercise behaviour; and 3) higher levels of social safeness.

Secondary hypotheses investigated the moderating effects of baseline eating disorder symptomatology and trait compassion on these outcomes. Regarding eating disorder pathology, research suggests that making comparisons differentially affects women with and without eating pathology; specifically, even among women high in body dissatisfaction, comparisons are most harmful to women who also have eating pathology (Leahey et al., 2011). Furthermore, comparisons have also been linked to the maintenance of eating disorders (Blechert et al., 2009). Relatedly, women who seek help for body image concerns tend to be those who are high in eating pathology (or those with an actual eating disorder). Therefore, it would be beneficial to determine which of our interventions would be most useful for this more vulnerable group in particular. For these reasons, we felt that baseline eating disorder symptomatology would be an important moderator variable. We hypothesized that it would be those who were struggling most—that is, those higher in eating pathology—who might be most entrenched in the competitive mentality, and therefore most likely to benefit from the novel approach of shifting to the caregiving mentality.

Trait compassion appeared to be a natural candidate for another moderating variable. Given that compassion is a key output of the caregiving mentality, we thought it would be important to determine whether individuals who were already high in this trait would stand to gain from our Caregiving intervention. We hypothesized that women who were more compassionate might not benefit as much from this intervention as others as the Caregiving approach may fail to provide them with new perspectives from which to address their appearance comparisons. Drawing on this same rationale, we hypothesized that those lower in trait compassion would experience the greatest gains from shifting to the caregiving mentality, given that this mindset offers a new perspective from which to address their struggles.

Method

Overview of the Procedure

The present study comprised multiple parts, including two online sessions, an in-lab session, and a 48-hour “contractual period”. The first session (15 min.) took place online and consisted of self-report measures that would be examined as moderator variables in data analyses. The second session (1 hr.), which included pre-intervention questionnaires and the experimental manipulation, took place in the lab at least 24 hours after the first session. The key intervention period of the study was the 48-hour period following the in-lab session, during which participants practiced the randomly assigned self-help strategy that had been taught to them in the lab. Finally, the third session (15 min.) took place online at the end of the 48-hour contractual period, and consisted of post-intervention measures.

Participants

Female undergraduate students were recruited via an online research participant pool and via advertisements posted campus-wide. In the interest of greater external validity, we felt that it would be important to be transparent about the nature and purpose of the study. That is, in the “real world”, women would be seeking out and performing these interventions with full knowledge of why they were doing so. As a result, the study was titled “Self-Help Strategies for Body Dissatisfaction” on recruitment materials. Furthermore, the description also stated that potential participants might not find themselves suitable for the study if they did not routinely compare their physical appearance to that of other women at least a few times a day. This caveat was not a formal exclusion criterion, given that some women may not entirely be aware of the frequency of their comparisons. The study was restricted to female participants due to research suggesting that while both men and women make appearance-related comparisons, women make

more upward comparisons about their bodies; these comparisons are also linked to greater body image dysfunction among women (Strahan et al., 2006; Thomas & Heinberg, 1993). An all-female sample would also facilitate ease of comparison with extant research in the field. Students participated in the study for either a combination of 1.5 bonus participation credits allocated towards psychology courses and \$5, or a total of \$20. Those who withdrew from the study prior to completion were remunerated for the portions in which they had participated.

Seventy-seven participants signed up for the study; of these, 14 failed to schedule or attend the lab session where they would have been randomly assigned to a condition and learned about the intervention, and were excluded from analyses. Of the 63 remaining participants, six failed to complete post-intervention measures: this included three participants from the Caregiving condition (out of 21), one from the Competition condition (out of 22), and two from the Control condition (out of 20). The final sample consisted of 57 female undergraduates who completed all pre- and post-intervention measures. The mean age was 19.90 ($SD = 2.06$), while the mean body mass index (BMI) of the sample was 22.17 ($SD = 3.92$). Ethnic composition was as follows: 43.4% White/Caucasian, 28.3% East Asian, 15.1% South Asian, 3.8% Black/African, 3.8% Southeast Asian, 3.8% West Indian/Caribbean, and 1.9% Middle Eastern.

Measures

Moderator variables. Participants completed a short battery of online questionnaires the week before, and no less than 24 hours before, their scheduled in-lab session. These questionnaires assessed participants' general rather than state-like tendencies and can thus be seen as more dispositional measures. The two measures that were pertinent to the present analyses are described below.

Eating Disorder Examination Questionnaire (EDE-Q; Fairburn, 2008). The EDE-Q is a 28-item questionnaire measuring eating disorder symptomatology over the previous 28 days. It consists of four different subscales: Dietary Restraint (e.g., “Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?”), Eating Concern (e.g., “Have you had a definite fear of losing control over eating?”), Shape Concern (e.g., “Have you had a definite desire to have a totally flat stomach?”), and Weight Concern (e.g., “Have you had a strong desire to lose weight?”). The items that form part of the subscale and global scores are rated on a 7-point Likert scale ranging from 0 (*No days/Not at all/None of the times*) to 6 (*Every day/Markedly/Every time*). Subscale means are averaged to yield a composite score of global eating disorder pathology, which was of primary interest in the present study. The EDE-Q has good test-retest reliability (Luce & Crowther, 1999), and Cronbach’s alpha for the EDE-Q Global score in our sample was 0.95, indicating excellent internal consistency. The mean global score was 2.58 (SD = 1.37), which falls within one SD of the mean of 1.65 (SD = 1.30) reported in a sample of American college women (Quick & Byrd-Bredbenner, 2013), as well as the mean of 1.52 (SD = 1.25) reported in a general population sample of Australian women (Mond, Hay, Rodgers, & Owen, 2006). Our sample’s slightly higher mean may be attributed to our advertisement as a study of “Self-Help Strategies for Body Dissatisfaction”, which could have attracted participants with higher eating pathology.

Compassion Scale (Pommier, 2011). The Compassion Scale is a 24-item questionnaire measuring one’s general tendency to feel compassion for others. It was modelled after Neff’s (2003b) Self-Compassion Scale and consists of six different subscales, of which items on the latter three “negative” subscales are reverse-scored: Kindness (e.g., “My heart goes out to people who are unhappy.”), Common Humanity (e.g., “Everyone feels down sometimes, it is part of

being human.”), Mindfulness (e.g., “I pay careful attention when other people talk to me.”), Indifference (e.g., “I don’t concern myself with other people’s problems.”), Separation (e.g., “I don’t feel emotionally connected to people in pain.”), and Disengagement (e.g., “I don’t think much about the concerns of others.”). Items are rated on a 5-point Likert scale ranging from 1 (*Almost never*) to 5 (*Almost Always*). Subscale means are averaged to yield a composite score of trait compassion. Cronbach’s alpha in our sample was 0.90, indicating excellent internal consistency. The mean compassion score was 4.12 (SD = 0.54), which falls within one SD of the mean of 3.57 (SD = 0.61) reported in a cross-validation study of the Compassion Scale (Pommier, 2011) using a mixed-gender sample of undergraduate students.

Dependent variables. Participants completed the following measures on two occasions: 1) in the lab session immediately before being introduced to their assigned self-help strategy, and 2) online from home at the end of their 48-hour intervention contract. In both instances, instructions on all measures were amended to ask participants to report on their experiences over the preceding 48-hour window.

Social Safeness and Pleasure Scale (SSPS; Gilbert et al., 2009a). The SSPS is an 11-item questionnaire measuring the extent to which individuals experience their social worlds as a safe, warm, and soothing environment. Sample items include “I feel secure and wanted”, and “I feel connected to others”. Items are rated on a 5-point Likert scale ranging from 1 (*Almost never*) to 5 (*Almost all the time*). Scores on each of the items are averaged to yield a composite score of social safeness. Cronbach’s alpha in our sample was 0.94, indicating excellent internal consistency. The mean social safeness score was 3.43 (SD = 0.85), which falls within one SD of the mean of 3.61 (SD = 0.70) reported in the development of the SSPS (Gilbert et al., 2009a) using a sample of mixed-gender undergraduate students.

Body Shape Questionnaire – 16-item B version (BSQ-16B; Evans & Dolan, 1993). The BSQ-16B measures body dissatisfaction. Sample items include “Have you felt excessively large and rounded?”, and “Have you been afraid that you might become fat (or fatter)?” Items are rated on a 6-point Likert scale ranging from 1 (*Never*) to 6 (*Always*). Scores on each of the items are summed to yield a composite score of body dissatisfaction. Cronbach’s alpha in our sample was 0.95, indicating excellent internal consistency. The mean body dissatisfaction score was 55.89 (SD = 17.36), which falls within one SD of the mean of 40.0 (SD = 16.35) reported in a validation study of the BSQ-16B (Evans & Dolan, 1993) using a sample of British women attending a family planning and well woman clinic. Our sample’s slightly higher mean may be attributed to our advertisement as a study of “Self-Help Strategies for Body Dissatisfaction”, which could have attracted participants with higher body dissatisfaction.

Body, Eating, and Exercise Comparison Orientation Measure (BEECOM; Fitzsimmons-Craft, Bardone-Cone, & Harney, 2012). The BEECOM is an 18-item questionnaire measuring eating disorder-related comparison orientation, which is the extent to which individuals compare their body, their eating habits, and their exercise habits to others. It consists of three different subscales: Body Comparison Orientation (e.g., “I compare my body shape to that of my peers.”), Eating Comparison Orientation (e.g., “During meals, I compare what I am eating to what others are eating.”), and Exercise Comparison Orientation (e.g., “When I work out, I evaluate how hard my workout was compared to how hard my friends say they worked out.”). Items are rated on a 7-point Likert scale ranging from 1 (*Never*) to 7 (*Always*). Item scores are summed to yield each of the subscale scores, which are in turn summed to yield a composite score of eating disorder-related comparison orientation. The BEECOM has high test-retest reliability (Fitzsimmons-Craft et al., 2012), and Cronbach’s alpha in our sample for the total scale score

was 0.96, indicating excellent internal consistency. The mean eating disorder-related comparison orientation score in our sample was 76.80 (SD = 22.94), which falls within one SD of the mean of a sample of young college women reported in the validation of the BEECOM, 67.68 (SD = 23.84) (Fitzsimmons-Craft et al., 2012).

Intervention credibility and compliance. Participants completed a measure of intervention credibility in the lab session immediately after rehearsing their assigned self-help strategy. Participants also answered questions about compliance with their assigned self-help strategy during the 48-hour contract period, using an online questionnaire after the period had ended.

Credibility/Expectancy Questionnaire (CEQ; Devilly & Borkovec, 2000). The CEQ is a 6-item questionnaire measuring individuals' expectancies about a given intervention and their beliefs in its credibility. The questionnaire was modified for the purposes of this study. Specifically, the wording of items was altered in two cases: instead of "therapy" or "treatment", the word "strategy" was used; and instead of "trauma symptoms", the phrase "body dissatisfaction" was used. Four items are rated on a 9-point Likert scale ranging from 1 (*Not at all logical/Not at all useful/Not at all confident/Not at all*) to 9 (*Very logical/Very useful/Very confident/Very much*), while two are rated on a 0-100% scale in 10% increments. A score for Credibility is derived from the mean of the first three items (e.g., "At this point, how logical does the strategy offered to you seem?") while a score for Expectancy is derived from the mean of the last three items (e.g., "If you were to practice this strategy for the next month, how much improvement in your body dissatisfaction do you think will occur?"). The CEQ has good test-retest reliability (Deville & Borkovec, 2000), and Cronbach's alpha in our sample was 0.91, indicating excellent internal consistency.

Compliance items. In the course of collecting data on participants' experiences with their assigned self-help strategy during the 48-hour contract period, they answered two different questions measuring compliance. On the first item, in which participants were asked "On what percentage of the comparisons that you made did you implement this strategy as instructed?" they provided a rating from 0-100%. On the second item, in which participants were asked "When you implemented this strategy as instructed, how much effort did you put into implementing this strategy?", they provided a rating on a 5-point Likert scale ranging from 0 (*Not at all*) to 4 (*Extremely*).

Procedure

Interested participants were directed to a link to a Qualtrics survey made available via the online participant pool. The Information-Consent Letter was presented and consent was also obtained at this time; this process was repeated at every point of subsequent participation. Next, participants were presented with the survey assessing the moderator variables described above.

In-lab session. Participants were scheduled for an in-lab session with a researcher which generally took place anywhere one to eight days after completing their online questionnaires. Participants were first asked if they had any questions or concerns about the Information-Consent Letter and were then oriented to the procedures for the in-lab session. Participants completed all in-lab procedures on a desktop computer located in a private room. All study tasks were delivered via Qualtrics.

Participants first completed baseline measures of the dependent variables described above. Then, they listened to a series of audio clips with accompanying text during which they were briefly introduced to the concept of body dissatisfaction and appearance comparisons. We discussed the prevalence of body dissatisfaction among young women in contemporary society

and touched on the frequency of media messages relaying the ideal appearance. We stated that making comparisons with other women was a common occurrence, especially when feeling preoccupied or dissatisfied with one's body. A wide variety of potential targets (e.g., family members, friends, acquaintances, strangers) and settings (e.g., on social media, during lectures, on public transit, while spending time with friends) for comparison were mentioned, and an example of an upward appearance comparison was provided:

“One particular example might be that you checked Facebook last night and saw your high school classmate’s vacation pictures and noticed how much thinner she is now than you are.”

Experimental manipulation. The experimental manipulation was also presented as a series of audio clips with accompanying text. The goal of the manipulation was to help participants practice in-lab what we would ultimately be asking them to do during their 48-hour “contractual period”. Participants were asked to vividly recall a recent distressing appearance comparison they had made to another woman in order to simulate the experience of making a comparison in the real world:

“Now please think back to a recent time in which you started to compare yourself to another woman in terms of appearance – a real-life comparison that made you really feel inadequate and dissatisfied with your appearance or body. Really bring this comparison to mind focusing on the various aspects of the other person’s appearance that you thought were superior to yours.”

Following this recall, participants were introduced to and led through their randomly assigned *caregiving*, *competition*, or *control* “self-help strategy.” They were told they would be asked to employ this particular strategy whenever they made appearance comparisons over the

subsequent 48 hours. Each strategy rehearsal was presented with the same overarching structure: an introduction discussing the research-based benefits of each strategy, an interactive portion leading participants through the process of applying the strategy to target their recently-recalled comparison, and a brief conclusion addressing anticipated reticence specific to each strategy and encouraging participants to practice the strategy.

Caregiving condition. The rationale presented for this self-help strategy normalized the competitive mindset that people adopt when focusing on making comparisons, and then discussed its downsides, such as feeling disconnected from others and self-focused. The audio guide introduced the idea that we also have a compassion-focused mindset at our disposal, which is what is active when we care for others. Deliberately shifting to this compassionate mindset was presented as a self-help strategy that could lead to greater feelings of happiness and social connectedness. The presentation and wording of this self-help strategy was adapted from Gilbert's (2010) previous work in compassion and social mentalities and from loving-kindness meditation (Salzberg, 1995). In this condition, participants were asked to shift away from seeing their comparison target as a competitor and instead as a fellow human being, and then to generate caring thoughts and feelings towards them:

“In this compassionate mindset, shift away from seeing this person as a competitor, or someone who looks better than you, but instead focus on the fact that you are both human beings, and try to generate caring thoughts and feelings towards them. Really get in touch with the part of yourself that wants other people to be free from suffering and happy, and send these well-wishes to this person.”

Participants were asked to focus on getting into this mindset by recalling a time when they had felt compassionate towards another person or animal. They were led to bring these

intentions and feelings of compassion to the forefront of their mind and then to redirect them to the target of their recalled comparison:

“Imagine yourself expanding as if you are becoming calmer, wiser, stronger, and more mature...really able to care for or help that person. Pay attention to your body as you remember your feelings of kindness. Create a compassionate facial expression. Spend a moment with any expansion and warmth in your body. Note a real genuine desire for this other person to be free of suffering and to flourish. Now bring to mind this person you were recently comparing yourself to, while staying in touch with your compassionate feelings and intentions. Keep these alive and direct these feelings of compassion toward this person. With this person in mind, and these compassionate intentions within you, imagine saying: “May you be well”, “May you be happy”, and “May you be free from suffering.”

Competition condition. The rationale presented for the competition self-help strategy suggested to participants that they could minimize any sense of inadequacy from their recalled comparison by thinking of the various ways in which they might be superior to their comparison target. The audio guide presented and familiarized participants with the self-help strategy of generating qualities, skills, or accomplishments that participants have that their comparison target does not have or has to a lesser degree. The presentation of this strategy and the wording used were based on previous research in which downward comparisons in non-appearance domains were used to intervene with the adverse effects of upward appearance comparisons to thin-ideal media (Lew et al., 2007). In this condition, participants were asked to focus on domains outside of appearance in which they feel particularly talented or successful:

“...we want you to identify various other domains outside of appearance (e.g., intelligence, work ethic, athletic accomplishments, academic or career accomplishments, quality

of life, social relationships, etc.) in which you are better than this person. ... Really get in touch with the part of yourself that knows you are better than other people in certain ways – the part of you that is proud of your talents and successes.”

In this condition, participants were asked to focus on getting in touch with the competitive part of themselves by recalling aspects of themselves, their life, and their achievements of which they feel proud, or which they value:

“To help you get into this mindset, you might try to recall a time when you were more successful than others; for example, a time when you got a highly desired co-op job or got a higher mark on a test than your friends. Or simply think of things about yourself and your life that you value and pride yourself on, for example your ability to form deep friendships.”

They were led to bring these intentions and feelings of competition to the forefront of their mind and then redirect them to the target of their recalled comparison:

“Now tell yourself the various ways in which you might be better than this person. For example, “I think I’m better than her at forming lasting friendships” or “I have gotten better co-op jobs than her” or “People think I’m more genuine than her.” Try to think of personally-relevant comparisons you can make with this person where you believe you are better.”

Control condition. The rationale for the control self-help strategy presented the approach of using mental strategies to distract oneself from continuing to make comparisons, and their benefits. The audio guide presented and familiarized participants with the self-help strategy of using mental distractions as “short-term time-outs” to interrupt negative and/or stressful states of mind. In this condition, participants were asked to count backwards in threes from 50, prioritizing accuracy and even pace:

“In this distraction task, we would like you to focus on counting backwards in threes from 50 and then continuing on with your day....The goal here is to prioritize getting the numbers right and keeping an even pace.”

Contract signing. For their final task of the in-lab session, participants were asked to sign a written contract with the researcher in which they would commit to employing their assigned self-help strategy for the next 48 hours, whenever they made an upward appearance comparison to another woman. This contract protocol has been used successfully in previous experimental research (Boone, Soenens, Vansteenkiste, & Braet, 2012). Two copies of the contract were signed—one retained by the researcher, and one retained by the participant. An excerpt is presented below:

“This is a contract made between (participant) and (researcher) on (date). I, (participant) confirm that in the next 48 hours, as soon as I find myself comparing my body to another woman’s body, I will commit to [immediately shifting my mindset to a compassionate one / immediately shifting my mindset to a competitive one that focuses on my superior qualities / performing my counting distraction task]. I understand what I am required to do and agree to do this consistently throughout the next 48 hours. For example, if I encounter a person whom I believe to be thinner or more attractive than I am, I will shift from trying to figure out ways in which they look better than me, and instead focus on [developing caring, compassionate feelings toward them, and wish them happiness and strength in whatever struggles they are going through / how I am more intelligent, athletic, or hard-working / counting backwards in threes from 50, prioritizing my accuracy and even pace].”

In order to facilitate study compliance, participants were also given a few minutes after signing the contract to generate examples of opportunities in the next 48 hours to employ the

strategy and the specifics of how they might do so. A few examples were presented on the contract for reference. This written activity was completed on the participant's copy of the contract and was not viewed by the researcher. At the end of each participant's 48-hour contractual period, she received a link to a set of post-intervention questionnaires consisting of the dependent variables listed above. We also collected qualitative data on participants' experiences with their strategy during the contract period.

Results

Analytic Strategy

All analyses were conducted in SAS 9.4 (SAS Institute, 2012). In order to test the first set of hypotheses—that is, to determine whether the Caregiving condition benefitted participants over and above the other conditions—a repeated measures ANOVA was conducted with the following dependent variables: social safeness, body dissatisfaction, and eating disorder-related comparison orientation. These primary analyses included the intervention condition as a between-subjects factor with three levels (Caregiving, Competition, Control), and Time as a within-subjects factor with two levels (Time 1 or pre-intervention and Time 2 or post-intervention). All Time 1 variables were standardized in order to facilitate interpretation of results.

For analyses that yielded a significant Condition x Time effect, 1-df contrasts were used to test five planned comparison hypotheses: (1) Caregiving vs. Competition condition; (2) Competition vs. Control condition; (3) Caregiving vs. Control condition; (4) Caregiving and Competition conditions vs. Control condition; and (5) Caregiving vs. Competition and Control conditions.

Multiple regression analyses were conducted to test our second set of hypotheses – namely, to determine whether baseline (i.e., a 28-day period prior to the study) eating disorder symptomatology and/or trait compassion moderated the impact of condition on the dependent variables at Time 2. The dependent variables were social safeness, body dissatisfaction, and eating disorder-related comparison orientation at Time 2, while the Time 1 levels of these variables served as respective covariates. Condition, the moderator variable in question (i.e.,

eating disorder symptomatology or compassion), and the interaction between the two were entered as simultaneous predictors.

Preliminary Analyses

Table 1 presents zero-order correlation coefficients for all moderator variables and dependent variables at Time 1. Pearson correlations indicated that body dissatisfaction had a strong positive correlation with eating disorder-related comparison orientation and eating disorder pathology, and a moderate negative correlation with social safeness. Social safeness and compassion shared a moderate positive correlation. Compassion also had a moderate negative correlation with both body dissatisfaction and eating disorder symptomatology, indicating that individuals who were less compassionate had more body dissatisfaction and eating pathology. Finally, not surprisingly, eating disorder symptomatology had a moderate positive correlation with eating-disorder related comparison orientation, revealing that those with more eating pathology made more frequent comparisons to others on the basis of eating, exercise, and body appearance.

Before testing our primary hypotheses, we examined participants' expectancies about the interventions as well as credibility to ensure there were no differences between the conditions. The mean rating for Credibility was 0.56 (SD = 0.17) out of a possible maximum rating of 1, indicating that participants found the interventions to be somewhat credible at the outset. The mean rating for Expectancy was 0.42 (SD = 0.17) out of a possible maximum rating of 1, indicating that participants had slightly below average expectations about the efficacy of the interventions. There were no significant differences— $F(2, 60) = 0.36, p = .70$, and $F(2, 60) = 0.41, p = .67$, respectively—between the three conditions on Credibility or Expectancy,

suggesting that across conditions, participants found their assigned self-help strategy to be equally credible and had equivalent levels of expectations about them.

We also examined participants' self-reported compliance with the interventions to ensure there were no differences between the conditions. The first compliance item asked participants about the proportion of comparisons in which they implemented their learned self-help strategy as instructed, while the second asked about how much effort they put into implementing the strategy when doing so. The mean compliance rating for Item 1 was 74.63 (SD = 27.05) out of a possible maximum rating of 100, indicating that the overall level of compliance was high. The mean effort rating (Item 2) was 3.70 (SD = 0.68) out of a possible maximum rating of 4, indicating that the overall level of participant effort was high. There were no significant differences— $F(2, 53) = 0.74, p = .48$ and $F(2, 54) = 0.38, p = .69$, respectively—between the three conditions on either compliance item, suggesting that between conditions, participants were equally compliant and effortful in employing their learned self-help strategy.

Central Analyses

Social safeness. There was a significant effect of Time on social safeness, $F(1, 53) = 10.28, p = .003$ with participants across conditions experiencing an increase in social safeness over the 48-hour contract period. Condition and Time interacted to predict social safeness at a trend-level, $F(2, 53) = 2.90, p = .06$, suggesting that condition impacted the change in feelings of social safeness participants experienced over the 48-hour contract period. Planned comparisons showed three significant contrasts supporting hypotheses: the Caregiving condition increased feelings of social safeness more than the Competition condition, $F(1, 53) = 4.52, p = .04$, the Control condition, $F(1, 53) = 4.26, p = .04$, and the average of both the Competition and Control conditions, $F(1, 53) = 5.80, p = .02$. No other contrasts were significant.

Regression analyses revealed that trait compassion interacted with condition to predict social safeness at Time 2, $F(2, 48) = 3.90, p = .03$. In order to determine the nature of this interaction, Time 2 social safeness scores, controlling for Time 1 scores, were estimated and graphed within each condition for participants with lower (1 SD below the mean) and higher (1 SD above the mean) levels of trait compassion (see Figure 1). Contrasts revealed that individuals with lower trait compassion in the Caregiving condition had significantly higher social safeness scores after the 48-hour contract period compared to their counterparts in the Competition, $t(48) = 2.06, p = .05$, and Control, $t(48) = 2.6, p = .01$, conditions. In contrast, individuals with higher trait compassion in the Caregiving condition had significantly lower social safeness scores after the 48-hour contract period compared to their counterparts in the Competition, $t(48) = -2.06, p = .05$, and Control, $t(48) = -2.63, p = .01$, conditions.

Baseline eating disorder symptomatology did not significantly interact with condition to predict social safeness at Time 2, $F(2, 48) = 1.49, p = .23$.

Body dissatisfaction. There was a significant effect of Time on body dissatisfaction, $F(1, 53) = 15.19, p < .001$, whereby across conditions, participants experienced a decrease in body dissatisfaction over the 48-hour contract period. No significant interaction between Condition and Time was found, $F(2, 53) = 0.34, p = .71$, indicating that the condition participants were assigned to did not influence the change in body dissatisfaction they experienced over the 48-hour contract period.

In regression analyses, trait compassion did not significantly interact with condition to predict body dissatisfaction at Time 2, $F(2, 48) = 2.05, p = .14$.

Baseline eating disorder symptomatology interacted with condition to predict body dissatisfaction at Time 2, $F(2, 48) = 3.42, p = .04$. Figure 2 depicts Time 2 body dissatisfaction

estimates within each condition for participants with lower and higher levels of baseline eating disorder symptomatology. Contrasts indicated that individuals with higher eating pathology in the Caregiving condition had lower body dissatisfaction scores after the 48-hour contract period compared to those with higher eating pathology in the Competition condition, $t(48) = -2.57, p = .01$, and the Control condition, $t(48) = -1.71, p = .09$ (see Figure 2). In contrast, individuals with lower eating pathology in the Caregiving condition had significantly higher body dissatisfaction scores compared to those in the Competition condition, $t(48) = 2.57, p = .01$; the same result was found at trend-level between the Caregiving and Control conditions, $t(48) = 1.71, p = .09$.

Eating disorder-related comparison orientation. There was a significant effect of Time on eating disorder-related comparison orientation, $F(1, 53) = 26.74, p < .001$, with participants across conditions experiencing a decrease in body dissatisfaction over the 48-hour contract period. No significant interaction between Condition and Time was found, $F(2, 53) = 0.98, p = .38$, suggesting that condition did not impact change in eating disorder-related comparison orientation over the 48-hour contract period.

In regression analyses, trait compassion did not interact with condition to predict eating disorder-related comparison orientation at Time 2, $F(2, 48) = 2.35, p = .11$. However, because this effect approached a statistical trend, we thought it would be interesting to probe the interaction. Figure 3 depicts Time 2 estimates of scores on eating disorder-related comparison orientation within each condition for participants with lower (1 SD below the mean) and higher (1 SD above the mean) levels of trait compassion. Contrasts indicated that individuals with lower trait compassion in the Caregiving condition were significantly less oriented towards making eating disorder-related comparisons after the 48-hour contract period compared to their

counterparts in the Competition condition, $t(48) = -2.16, p = .04$. However, individuals with higher trait compassion in the Caregiving condition were significantly more oriented towards making eating disorder-related comparisons after the 48-hour contract period compared to their counterparts in the Competition condition, $t(48) = 2.16, p = .04$.

A trend emerged whereby eating disorder symptomatology interacted with condition to predict eating disorder-related comparison orientation at Time 2, $F(2, 48) = 2.62, p = .08$. Figure 4 portrays estimated Time 2 levels of eating disorder-related comparison orientation for participants with lower and higher levels of baseline eating disorder symptomatology. Contrasts indicated that individuals with higher baseline eating disorder symptomatology in the Caregiving condition were significantly less oriented towards making eating disorder-related comparisons after the 48-hour contract period compared to those with higher eating pathology in the Competition condition, $t(48) = -2.28, p = .03$. In contrast, individuals with lower trait eating disorder symptomatology in the Competition condition were significantly less oriented towards making eating disorder-related comparisons after the 48-hour contract period compared to those with lower eating pathology in the Caregiving condition, $t(48) = 2.28, p = .03$.

Discussion

Using a novel intervention, the present study investigated the effectiveness of adopting a caregiving mindset in alleviating the negative consequences of appearance-focused social comparisons. Specifically, we sought to compare the impact of three different strategies that college women were to use after making unfavourable appearance comparisons during a 48-hour period: switching to a caregiving mindset focused on engendering compassion and well-wishes towards the target, remaining in a competitive mindset and making downward comparisons to the same target in different domains, and as a control condition, adopting a distraction-based tactic. Results supported (at trend-level) the hypothesis that relative to the other conditions, women in the Caregiving condition would report higher levels of social safeness after the 48-hour intervention period. In addition, baseline eating disorder symptomatology and trait compassion interacted with condition to predict post-intervention outcomes, including body dissatisfaction and eating disorder-related comparison orientation, with results generally suggesting that the Caregiving intervention was more beneficial for those higher in eating pathology and/or lower in trait compassion, whereas the Competitive intervention was more effective for those lower in eating pathology and/or higher in trait compassion.

Moderators of Intervention Effects

One of the most interesting set of findings to emerge from the present study was that the relative efficacy of our Caregiving versus Competition intervention depended on features of the participant – namely, their baseline eating pathology and their trait compassion. For women with higher baseline levels of eating disorder symptomatology, the Caregiving intervention had the greatest impact on body dissatisfaction and eating disorder-related comparison orientation over the 48-hour intervention period. However, for those with lower levels of eating disorder

symptomatology, the Competition intervention had the greatest impact. We also found that for women with lower trait levels of compassion, the Caregiving intervention had a greater impact on feelings of social safeness and eating disorder-related comparison orientation, but for individuals higher in trait compassion, the Competition condition did. Therefore, young women who were less compassionate or had more eating disorder pathology to begin with benefited more from responding to appearance comparisons by cultivating compassion and loving-kindness toward their comparison targets than they did from generating downward comparisons toward their targets on non-appearance domains; however, the reverse was true for individuals who were more compassionate or had less eating pathology.

It is interesting to speculate about the reasons why participants' eating pathology and trait compassion moderated the effects of our interventions. One way to interpret the results would be to see levels of compassion and eating pathology as indirect indicators of women's competitive orientation. Indeed, zero-order correlations revealed that women with more eating pathology endorsed a greater comparison-orientation, which suggests a more competitive mindset. Furthermore, compassion is often seen as the opposite of competitiveness (Gilbert et al., 2009b), suggesting that lower compassion may represent a tendency toward competitiveness and higher compassion a tendency against it. When examined from this perspective, our results suggest that adopting a caregiving approach vis-à-vis social comparison targets was more beneficial than making downward comparisons to targets for individuals who were more competitively oriented to begin with, whereas the reverse was true for college women who were lower in competitiveness. For more competitively oriented women, it is possible that any strategy involving comparisons (whether upward or downward) may have perpetuated a competitive orientation. Shifting this orientation altogether to one of caregiving may have changed these

women's view of other females from 'threats' and 'rivals' to fellow human beings with their own suffering, thereby reducing the need to make appearance comparisons and the associated feelings of body dissatisfaction. It is also the case that for women with higher eating pathology in particular, attending to non-appearance domains of superiority simply may not have been enough to alleviate their body image concerns, given their higher level of preoccupation; here especially, a shift in overall perspectives may have been necessary.

Wood's (1989) theory that social comparisons can be carried out in the pursuit of different goals, such as self-evaluation, self-improvement, and self-enhancement, may also help to explain some of our findings. For women with lower eating pathology and/or higher compassion, appearance comparisons may be made more often in the pursuit of self-enhancement, that is, a motivation to maintain or enhance their self-esteem. Consequently, the downward comparisons made in the Competition intervention may serve as a better way to accomplish this goal, as opposed to the compassion and well-wishes generated in the Caregiving intervention, which is unlikely to affect self-esteem. While such an explanation may be at odds with extant research suggesting that individuals low in self-esteem, who generally have more eating pathology, are more likely to make comparisons to self-enhance, future research should nevertheless explore this idea, as it could apply uniquely to the physical appearance domain, which already appears to be an exceptional domain when it comes to social comparison theory.

Intervention Effects on Changes in Social Safeness

Although together, our results suggest that cultivating a caregiving mindset was effective at reducing body dissatisfaction and an eating disorder-related comparison orientation for certain types of individuals only, we found that it was most effective *across all participants* at increasing feelings of social safeness. Given that the caregiving mindset is oriented towards

fostering compassion and a desire to connect with others, it makes sense that adopting it in the face of an appearance comparison would, more so than a downward-comparison strategy, help individuals cease to perceive others as competitors, and instead start to feel emotionally connected to them, which is a component of social safeness. Our finding is consistent with earlier work demonstrating the effectiveness of compassion-based interventions in fostering social connection (e.g., Hutcherson et al., 2008). Another implication of our results is that in the appearance domain, using downward comparisons to protect against the negative consequences of upward comparisons may not be the most effective of strategies if one's goal is to improve an individual's feelings of security and safeness in their social environment.

Theoretical and Practical Implications

This study was the first to our knowledge to apply social mentalities theory to inform the study of interventions for harmful appearance comparisons. Our results suggest that the theory is a useful lens through which to understand and intervene with social comparisons in the appearance domain. This study was also the first to show the benefits of cultivating compassion for others on body image and eating disorder-related behaviour. Such results are a novel addition to a growing body of work demonstrating the benefits of compassion for others on one's psychological (e.g., Cosley et al., 2010; Seppala et al., 2014) and physical well-being (e.g., Brown et al., 2003; Konrath et al., 2012), whether through providing compassion-motivated support or through cultivating compassion for others as a part of loving-kindness meditation (Hutcherson et al., 2008). Furthermore, although this study only specifically targeted appearance comparisons, the measure we used to assess appearance comparisons assessed comparisons based on body, eating, and exercise. It is therefore quite remarkable that for a subset of our participants (those lower in compassion and higher in eating pathology), the Caregiving

intervention emerged as beneficial for this range of comparisons implicated in eating pathology. The encouraging results of the present study suggest that there may be promise in encouraging the cultivation of compassion for others as a way to target other problems in the body image and eating domain, such as fat talk, or exercise dependence.

From a practical standpoint, this study suggests that the way we should teach young women to cope better with their appearance comparisons will depend on their current level of eating pathology and/or compassion. For individuals who are less vulnerable – that is, those who have less eating pathology and more compassion – there may be greater merit to thinking about their comparisons from the perspective of social comparison theory, and thus to encouraging them to make more downward comparisons. However, for those with higher eating pathology and/or lower compassion, a different perspective and approach may be more advisable. Specifically, by making a habit of generating feelings of compassion and well-wishes towards those they compare themselves with unfavourably, these individuals are not only likely to experience less body dissatisfaction and less of a need to make eating disorder-related comparisons to begin with, but are also likely to feel safer and more connected to others in their social environment. Given that these individuals generally struggle socially (Hinrichsen, Wright, Waller, & Meyer, 2003; Striegel-Moore, Silberstein, & Rodin, 1993; Tiller et al., 1997), which may in turn perpetuate their body dissatisfaction, such a contribution would be non-trivial.

Limitations and Future Directions

This study had some limitations that should be addressed in future research. First, the participant sample was relatively small and homogeneous, composed of young females recruited from a university setting. While we restricted the study to female participants based on research pointing to a greater frequency of upward appearance-focused comparisons among women and a

stronger link to body image dysfunction as a result (Strahan et al., 2006; Thomas & Heinberg, 1993), both men and women do make appearance-focused comparisons. It will be important to extend the generalizability of the present study's results by investigating the effectiveness of adopting a caregiving mindset when faced with appearance-focused social comparisons among males, younger and older populations, individuals recruited from community-based settings, and also clinical settings. It would also be interesting to see how results may diverge for these different groups or how they might change with a larger sample size.

Second, this study relied exclusively on self-report measures to assess variables; consequently, some participants could have been motivated by self-presentation concerns when completing questionnaires. The high mean for the compassion measure in our sample may be one such indicator of such influences, as participants may have wanted to present themselves as compassionate in their responses. Future research would benefit from the incorporation of behavioural measures (e.g., restrained eating task) into the study design.

Third, for feasibility reasons, this study was conducted over a relatively brief period of 48 hours. This time period may not have afforded participants enough time to habituate to their assigned intervention, and thus, fully benefit or show marked changes from its effects. This could be especially true of the Caregiving intervention, which was likely a novel strategy for most participants to which it was assigned. Future research should extend the intervention time period to allow for this habituation, but also to investigate the sustainability of the various strategies taught to participants over time. For example, while the Competition intervention was shown to be beneficial to some women in this study, perhaps its effectiveness as a strategy degrades over time—this could potentially explain why the research on the utility of downward comparisons is mixed. It would also be of interest to examine how the various interventions may

change in effectiveness over time, and to see whether these changes are moderated by demographics and/or other baseline variables. For instance, do women benefit more from the Caregiving intervention more so than men?

Fourth, while this study was limited to the domain of appearance-focused comparisons, future research could apply this social mentalities-based intervention to other domains of social comparison, such as wealth or intelligence, to test its generalizability.

Finally, the results of the present study brings forth the natural question of what drives these effects; for example, how exactly does the caregiving mentality bring about increased feelings of social safeness? Although speculative, one potential explanation could be drawn from Fredrickson (2004)'s broaden-and-build theory of positive emotions, which proposes that positive emotions (e.g., joy, contentment, love) broaden one's attention and momentary thought-action repertoire (i.e., the range of cognitive and behavioural tendencies available as responses to an event), and in doing so build one's psychological resilience and personal resources for survival. Extant literature has explored this theory as the mechanism behind loving-kindness meditation (Fredrickson et al., 2008). Similarly, broaden-and-build theory could be driving the Caregiving intervention, given the intervention's inclusion of components of loving-kindness; its generation of positive emotions that are intrinsic to the caregiving mindset, such as warmth and love; and its directed broadening of participants' attention from only themselves and their bodies to their comparison targets. Future research should test this proposed mechanism, as well as other plausible mechanisms, behind the observed effects.

Conclusions

The present study was the first to investigate the benefits of adopting a caregiving mindset in the face of appearance-focused social comparisons. Findings suggest that cultivating a

caregiving mindset toward the target of unfavourable appearance comparisons can increase feelings of social safeness, and for some women, alleviate body dissatisfaction and/or reduce the tendency to make body, eating, and exercise-related comparisons. Results also suggest that cultivating a caregiving mindset may be especially helpful to women with lower trait compassion and/or higher baseline eating pathology, who are perhaps most vulnerable to the threat of appearance-focused social comparisons.

References

- Albertson, E. R., Neff, K. D., & Dill-Shackleford, K. E. (2015). Self-compassion and body dissatisfaction in women: A randomized controlled trial of a brief meditation intervention. *Mindfulness, 6*(3), 444-454.
- Alexander, R. D. (1990). How did humans evolve? Reflections on the uniquely unique species. *University of Michigan Museum of Zoology Special Publication, 1*, 1-38.
- Arrindell, W. A., Eisemann, M., Oei, T. P. S., Caballo, V. E., Sanavio, E., Sica, C., ... Zaldívar, F. (2004). Phobic anxiety in 11 nations: Part II. Hofstede's dimensions of national cultures predict national-level variations. *Personality and Individual Differences, 37*(3), 627-643. doi:10.1016/j.paid.2003.11.002
- Arrindell, W. A., Steptoe, A., & Wardle, J. (2003). Higher levels of state depression in masculine than in feminine nations, *Behaviour Research and Therapy, 41*(7), 809-817. doi:10.1016/S0005-7967(02)00185-7
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497-529.
- Bellew, R., Gilbert, P., Mills, A., McEwan, K., & Gale, C. (2006). Eating attitudes and striving to avoid inferiority. *Eating Disorders, 14*(4), 313-322. doi:10.1080/10640260600796242
- Bailey, S. D., & Ricciardelli, L. A. (2010). Social comparisons, appearance related comments, contingent self-esteem and their relationships with body dissatisfaction and eating disturbance among women. *Eating Behaviors, 11*(2), 107-112.
- Blechert, J., Nickert, T., Caffier, D., & Tuschen-Caffier, B. (2009). Social comparison and its relation to body dissatisfaction in bulimia nervosa: Evidence from eye movements. *Psychosomatic Medicine, 71*(8), 907-912.

- Boone, L., Soenens, B., Vansteenkiste, M., & Braet, C. (2012). Is there a perfectionist in each of us? An experimental study on perfectionism and eating disorder symptoms. *Appetite*, *59*(2), 531–540. doi:10.1016/j.appet.2012.06.015
- Bowlby, J. (1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.) New York, NY: Basic Books. (Original work published 1969)
- Boyce, C. J., Brown, G. D. A., & Moore, S. C. (2010). Money and happiness: Rank of income, not income, affects life satisfaction. *Psychological Science*, *21*(4), 471-475.
- Braun, T. D., Park, C. L., & Gorin, A. (2016). Self-compassion, body image, and disordered eating: A review of the literature. *Body Image*, *17*, 117-131.
- Breines, J. G., & Chen, S. (2013). Activating the inner caregiver: The role of support-giving schemas in increasing state self-compassion. *Journal of Experimental Social Psychology*, *49*(1), 58-64.
- Brown, S. L., Nesse, R. M., Vinokur, A. D., & Smith, D. M. (2003). Providing social support may be more beneficial than receiving it: Results from a prospective study of mortality. *Psychological Science*, *14*(4), 320-327.
- Buunk, B. R., Collins, R. L., Taylor, S. E., Van Yperen, N. W., & Dakof, G. A. (1990). The affective consequences of social comparison: Either direction has its ups and downs. *Journal of Personality and Social Psychology*, *59*(6), 1238–1249.
- Carson, J. W., Keefe, F. J., Lynch, T. R., Carson, K. M., Goli, V., Fras, A., & Thorp, S. R. (2005). Loving-kindness meditation for chronic low back pain: Results from a pilot trial. *Journal of Holistic Nursing*, *23*(3), 287-304.
- Cash, T. F., & Deagle, E. A. (1997). The nature and extent of body-image disturbances in anorexia nervosa and bulimia nervosa: A meta-analysis. *International Journal of Eating*

Disorders, 22(2), 107-126.

- Collins, R. L. (1996). For better or worse: The impact of upward social comparison on self-evaluations. *Psychological Bulletin*, 119(1), 51–69.
- Corning, A. F., Krumm, A. J., & Smitham, L. A. (2006). Differential social comparison processes in women with and without eating disorder symptoms. *Journal of Counseling Psychology*, 53(3), 338–349. doi:10.1037/0022-0167.53.3.338
- Cosley, B. J., McCoy, S. K., Saslow, L. R., & Epel, E. S. (2010). Is compassion for others stress buffering? Consequences of compassion and social support for physiological reactivity to stress. *Journal of Experimental Social Psychology*, 46(5), 816–823.
doi:10.1016/j.jesp.2010.04.008
- Crocker, J., & Canevello, A. (2008). Creating and undermining social support in communal relationships: The role of compassionate and self-image goals. *Journal of Personality and Social Psychology*, 95(3), 555.
- Devilley, G. J., & Borkovec, T. D. (2000). Psychometric properties of the credibility/expectancy questionnaire. *Journal of Behavior Therapy and Experimental Psychiatry*, 31(2), 73-86.
- Dohnt, H., & Tiggemann, M. (2006). The contribution of peer and media influences to the development of body satisfaction and self-esteem in young girls: A prospective study. *Developmental Psychology*, 42(5), 929-936.
- Emmons, R. A., & Diener, E. (1985). Factors predicting satisfaction judgments: A comparative examination. *Social Indicators Research*, 16(2), 157-167.
- Engeln–Maddox, R. (2005). Cognitive responses to idealized media images of women: The relationship of social comparison and critical processing to body image disturbance in college women. *Journal of Social and Clinical Psychology*, 24(8), 1114-1138.

- Evans, C., & Dolan, B. (1993). Body Shape Questionnaire: derivation of shortened “alternate forms”. *International Journal of Eating Disorders*, *13*(3), 315-321.
- Fairburn, C. G. (2008). *Cognitive behavior therapy and eating disorders*. New York, NY: Guilford Press.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*(2), 117–140.
doi:10.1177/001872675400700202
- Fitzsimmons-Craft, E. E., Bardone-Cone, A. M., & Harney, M. B. (2012). Development and validation of the Body, Eating, and Exercise Comparison Orientation Measure (BEECOM) among college women. *Body Image*, *9*(4), 476-487.
- Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *359*, 1367-1377.
doi:10.1098/rstb.2004.1512
- Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open hearts build lives: Positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology*, *95*(5), 1045-1062.
doi:10.1037/a0013262
- Fredrickson, B. L., & Roberts, T. (1997). Objectification theory: Toward understanding women’s lived experiences and mental health risks. *Psychology of Women Quarterly*, *21*(2), 173-206.
- Garner, D. M. (2002). Measurement of eating disorder psychopathology. In C. G. Fairburn & K. D. Brownell (Eds.), *Eating disorders and obesity: A comprehensive handbook* (pp. 141–146). New York, NY: Guilford Press.
- Gibbons, F. X. (1986). Social comparison and depression: Company’s effect on misery. *Journal of Personality and Social Psychology*, *51*(1), 140–148.

- Gilbert, P. (1989). *Human Nature and Suffering*. Hove, UK: Psychology Press.
- Gilbert, P. (2000). Social mentalities: Internal “social” conflict and the role of inner warmth and compassion in cognitive therapy. In P. Gilbert & K. G. Bailey (Eds.), *Genes on the couch: Explorations in evolutionary psychotherapy* (pp. 118-150). New York, NY: Brunner-Routledge.
- Gilbert, P. (2004). Depression: A biopsychosocial, integrative, and evolutionary approach. In M. Power (Ed.), *Mood disorders: A handbook of science and practice* (pp. 99-142). Chichester, UK: John Wiley & Sons.
- Gilbert, P. (2005). *Compassion: Conceptualisations, research and use in psychotherapy*. Hove, UK: Routledge.
- Gilbert, P. (2010). *Compassion focused therapy: Distinctive features*. London, UK: Routledge.
- Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology*, 53(1), 6–41. doi:10.1111/bjc.12043
- Gilbert, P., McEwan, K., Mitra, R., Richter, A., Franks, L., Mills, A., et al. (2009a). An exploration of different types of positive affect in students and in patients with bipolar disorder. *Clinical Neuropsychiatry*, 6(4), 135–143.
- Gilbert, P., McEwan, K., Bellew, R., Mills, A., & Gale, C. (2009b). The dark side of competition: How competitive behaviour and striving to avoid inferiority are linked to depression, anxiety, stress and self-harm. *Psychology and Psychotherapy*, 82(2), 123–136.
doi:10.1348/147608308X379806
- Groesz, L. M., Levine, M. P., & Murnen, S. K. (2002). The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. *The International Journal of Eating Disorders*, 31(1), 1–16. doi:10.1002/eat.10005

- Hakmiller, K. L. (1966). Threat as a determinant of downward comparisons. *Journal of Experimental Social Psychology, 1*, 32-39.
- Helgeson, V. S., & Taylor, S. E. (1993). Social comparisons and adjustment among cardiac patients. *Journal of Applied Social Psychology, 23*(15), 1171-1195.
- Hermanto, N., & Zuroff, D. C. (2016). The social mentality theory of self-compassion and self-reassurance: The interactive effect of care-seeking and caregiving. *The Journal of Social Psychology, 1*–13. doi:10.1080/00224545.2015.1135779
- Hinrichsen, H., Wright, F., Waller, G., & Meyer, C. (2003). Social anxiety and coping strategies in the eating disorders. *Eating Behaviors, 4*(2), 117-126. doi:10.1016/S1471-0153(03)00016-3
- Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry, 61*(3), 348-358.
- Hutcherson, C. A., Seppala, E. M., & Gross, J. J. (2008). Loving-kindness meditation increases social connectedness. *Emotion, 8*(5), 720–724. doi:10.1037/a0013237
- Jackson, L. A. (1992). *Physical appearance and gender: Sociobiological and sociocultural perspectives*. Albany, NY: State University of New York Press.
- Kelly, A. C., Vimalakanthan, K., & Carter, J. C. (2014). Understanding the roles of self-esteem, self-compassion, and fear of self-compassion in eating disorder pathology: An examination of female students and eating disorder patients. *Eating Behaviors, 15*(3), 388-391.
- Kelly, A. C., Vimalakanthan, K., & Miller, K. E. (2014). Self-compassion moderates the relationship between body mass index and both eating disorder pathology and body image flexibility. *Body Image, 11*(4), 446–453. doi:10.1016/j.bodyim.2014.07.005
- Konrath, S., Fuhrel-Forbis, A., & Lou, A. (2012). Motives for volunteering are associated with

- mortality risk in older adults. *Health Psychology*, 31(1), 87-96. doi:10.1037/a0025226
- Leahey, T. M., Crowther, J. H., & Ciesla, J. A. (2011). An ecological momentary assessment of the effects of weight and shape social comparisons on women with eating pathology, high body dissatisfaction, and low body dissatisfaction. *Behavior Therapy*, 42(2), 197–210. doi:10.1016/j.beth.2010.07.003
- Leahey, T. M., Crowther, J. H., & Mickelson, K. D. (2007). The frequency, nature, and effects of naturally occurring appearance-focused social comparisons. *Behavior Therapy*, 38(2), 132–43. doi:10.1016/j.beth.2006.06.004
- Lemyre, L., & Smith, P. M. (1985). Intergroup discrimination and self-esteem in the minimal group paradigm. *Journal of Personality and Social Psychology*, 49(3), 660–670.
- Lev-Ari, L., Baumgarten-Katz, I., & Zohar, A. H. (2014a). Mirror, mirror on the wall: How women learn body dissatisfaction. *Eating Behaviors*, 15(3), 397–402. doi:10.1016/j.eatbeh.2014.04.015
- Lev-Ari, L., Baumgarten-Katz, I., & Zohar, A. H. (2014b). Show me your friends, and I shall show you who you are: The way attachment and social comparisons influence body dissatisfaction. *European Eating Disorders Review*, 22(6). doi:10.1002/erv.2325
- Lew, A. M., Mann, T., Myers, H., Taylor, S., & Bower, J. (2007). Thin-ideal media and women's body dissatisfaction: Prevention using downward social comparisons on non-appearance dimensions. *Sex Roles*, 57(7-8), 543–556. doi:10.1007/s11199-007-9274-5
- Lin, L. F., & Kulik, J. A. (2002). Social comparison and women's body satisfaction. *Basic and Applied Social Psychology*, 24(2), 115-123. doi:10.1207/S15324834BASP2402
- Lin, L. F., & Soby, M. (2016). Appearance comparisons styles and eating disordered symptoms in women. *Eating Behaviors*, 23, 7-12. doi:10.1016/j.eatbeh.2016.06.006

- Longe, O., Maratos, F. A., Gilbert, P., Evans, G., Volker, F. Rockliff, H., & Rippon, G. (2010). Having a word with yourself: Neural correlates of self-criticism and self-reassurance. *NeuroImage*, *49*(2), 1849-1856.
- Low, K. G., Charanasomboon, S., Brown, C., Hiltunen, G., Long, K., Reinhalter, K., & Jones, H. (2003). Internalization of the thin ideal, weight and body image concerns. *Social Behavior and Personality: an international journal*, *31*(1), 81-89.
- Luce, K. H., & Crowther, J. H. (1999). The reliability of the eating disorder examination—Self-report questionnaire version (EDE-Q). *International Journal of Eating Disorders*, *25*(3), 349-351.
- MacNeill, L. P., & Best, L. A. (2015). Perceived current and ideal body size in female undergraduates. *Eating Behaviors*, *18*, 71–75. doi:10.1016/j.eatbeh.2015.03.004
- Martin, M. C., & Gentry, J. W. (1997). Stuck in the model trap: The effects of beautiful models in ads on female pre-adolescents and adolescents. *Journal of Advertising*, *26*(2), 19-33.
- Mond, J. M., Hay, P. J., Rodgers, B., & Owen, C. (2006). Eating Disorder Examination Questionnaire (EDE-Q): Norms for young adult women. *Behaviour Research and Therapy*, *44*(1), 53-62.
- Morrison, T. G., Kalin, R., & Morrison, M. A. (2004). Body-image evaluation and body-image investment among adolescents: A test of sociocultural and social comparison theories. *Adolescence*, *39*(155), 571-592.
- Morse, S., & Gergen, K. J. (1970). Social comparison, self-consistency, and the concept of self. *Journal of Personality and Social Psychology*, *16*(1), 148-156.
- Murray, C. J. L. & Lopez, A. D. (1996). *The global burden of disease: A comprehensive assessment of mortality and disability from diseases. Injuries and risk factors in 1990 and*

projected to 2020. Cambridge, MA: Harvard University Press.

Myers, T. A., & Crowther, J. H. (2009). Social comparison as a predictor of body dissatisfaction: A meta-analytic review. *Journal of Abnormal Psychology, 118*(4), 683–98.

doi:10.1037/a0016763

Neff, K. (2003a). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*(2), 85–101.

Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*(3), 223-250.

Neff, K. D., & Beretvas, S. N. (2013). The role of self-compassion in romantic relationships. *Self and Identity, 12*(1), 78-98.

Neff, K. D., & Pommier, E. (2013). The relationship between self-compassion and other-focused concern among college undergraduates, community adults, and practicing meditators. *Self and Identity, 12*(2), 160-176.

Perry, B. D., Pollard, R. A., Blakley, T. L., Baker, W. L., & Vigilante, D. (1995). Childhood trauma, the neurobiology of adaptation, and “use-dependent” development of the brain: How “states” become “traits”. *Infant Mental Health Journal, 16*(4), 271-291.

Pinto-Gouveia, J., Ferreira, C., & Duarte, C. (2014). Thinness in the pursuit for social safeness: An integrative model of social rank mentality to explain eating psychopathology. *Clinical Psychology & Psychotherapy, 21*(2), 154-165.

Pommier, E. (2011). The compassion scale (Doctoral dissertation, University of Texas at Austin). *Dissertation Abstracts International Section A: Humanities and Social Sciences, 72*(4-A), 1174.

Poulin, M. J., Brown, S. L., Dillard, A. J., & Smith, D. M. (2013). Giving to others and the

- association between stress and mortality. *American Journal of Public Health*, 103(9), 1649–1655. doi:10.2105/AJPH.2012.300876
- Quick, V. M., & Byrd-Bredbenner, C. (2013). Eating Disorders Examination Questionnaire (EDE-Q): Norms for US college women. *Eating and Weight Disorders – Studies on Anorexia, Bulimia and Obesity*, 18(1), 29-35.
- Rancourt, D., Schaefer, L. M., Bosson, J. K., & Thompson, J. K. (2016). Differential impact of upward and downward comparisons on diverse women’s disordered eating behaviors and body image. *International Journal of Eating Disorders*, 49(5), 519–523.
doi:10.1002/eat.22470
- Rodin, J., Silberstein, L., & Striegel-Moore, R. (1984). Women and weight: a normative discontent. *Nebraska Symposium on Motivation*, 32, 267-307.
- Salovey, P., & Rodin, J. (1984). Some antecedents and consequences of social-comparison jealousy. *Journal of Personality and Social Psychology*, 19(4), 780–792.
- Salzberg, S. (1995). *Loving-kindness: The revolutionary art of happiness*. Boston, MA: Shambala Publications.
- Salzberg, S. (2011). Mindfulness and loving-kindness. *Contemporary Buddhism*, 12(1), 177-182.
doi:10.1080/14639947.2011.564837
- SAS Institute Inc. (2012). *SAS/STAT® 9.4 user’s guide*. Cary, NC: SAS Institute Inc.
- Seppala, E. M., Hutcherson, C. A., Nguyen, D. T., Doty, J. R., & Gross, J. J. (2014). Loving-kindness meditation: a tool to improve healthcare provider compassion, resilience, and patient care. *Journal of Compassionate Health Care*, 1(1), 5. doi:10.1186/s40639-014-0005-9
- Silberstein, L. R., Striegel-Moore, R., & Rodin, J. (1987). Feeling fat: A woman's shame. In H. B.

- Lewis (Ed.), *The role of shame in symptom formation* (pp. 89-108). Hillsdale, NJ: Erlbaum.
- Spitzer, B. L., Henderson, K. A., & Zivian, M. T. (1999). Gender differences in population versus media body sizes: A comparison over four decades. *Sex Roles, 40*(7-8), 545-565.
- Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin, 128*(5), 825.
- Stice, E., & Shaw, H. E. (2002). Role of body dissatisfaction in the onset and maintenance of eating pathology: A synthesis of research findings. *Journal of Psychosomatic Research, 53*(5), 985-993.
- Strahan, E. J., Wilson, A. E., Cressman, K. E., & Buote, V. M. (2006). Comparing to perfection: How cultural norms for appearance affect social comparisons and self-image. *Body Image, 3*(3), 211-227. doi:10.1016/j.bodyim.2006.07.004
- Strauss, C., Lever Taylor, B., Gu, J., Kuyken, W., Baer, R., Jones, F., & Cavanagh, K. (2016). What is compassion and how can we measure it? A review of definitions and measures. *Clinical Psychology Review, 47*, 15-27. doi:10.1016/j.cpr.2016.05.004
- Striegel-Moore, R. H., Silberstein, L. R., & Rodin, J. (1993). The social self in bulimia nervosa: Public self-consciousness, social anxiety, and perceived fraudulence. *Journal of Abnormal Psychology, 102*(2), 297-303.
- Sullivan, P. F. (2002). Course and outcome of anorexia nervosa and bulimia nervosa. In C. G. Fairburn & K. D. Brownell (Eds.), *Eating Disorders and Obesity: A Comprehensive Handbook*, (2nd ed., pp. 226-232). New York, NY: The Guilford Press.
- Thompson, J. K., & Heinberg, L. J. (1993). Preliminary test of two hypotheses of body image disturbance. *International Journal of Eating Disorders, 14*(1), 59-63.
- Thompson, K.J., & Stice, E. (2001). Thin-ideal internalization: Mounting evidence for a new risk

- factor for body-image disturbance and eating pathology. *Current Directions in Psychological Science*, 10(5), 181-183.
- Tiller, J. M., Sloane, G., Schmidt, U., Troop, N., Power, M., & Treasure, J. L. (1997). Social support in patients with anorexia nervosa and bulimia nervosa. *International Journal of Eating Disorders*, 21(1), 31-38.
- van den Berg, P., & Thompson, J.K. (2007). Self-schema and social comparison explanations of body dissatisfaction: A laboratory investigation. *Body Image*, 4(1), 29-38.
- Van Yperen, N. W., & Leander, N. P. (2014). The overpowering effect of social comparison information: On the misalignment between mastery-based goals and self-evaluation criteria. *Personality and Social Psychology Bulletin*, 40(5), 676–688.
doi:10.1177/0146167214523475
- Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychological Bulletin*, 90(2), 245–271.
- Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin*, 106(2), 231–248.
- Wood, J. V, Taylor, S. E., & Lichtman, R. R. (1985). Social comparison in adjustment to breast cancer. *Journal of Personality and Social Psychology*, 49(5), 1169–1183.
- Zessin, U., Dickhäuser, O., & Garbade, S. (2015). The relationship between self-compassion and well-being: A meta-analysis. *Applied Psychology: Health and Well-Being*, 7(3), 340-364.
doi:10.1111/aphw.12051

Table 1

Correlations between Moderator and Dependent Variables at Baseline

Variables	SS	BD	EDCO	C	EDS
Social safeness (SS)	--				
Body dissatisfaction (BD)	-.36**	--			
Eating disorder-related comparison orientation (EDCO)	-.14	.65***	--		
Compassion (C)	.41***	-.29*	-.01	--	
Eating disorder symptomatology (EDS)	-.22	.74***	.46***	-.27*	--

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$

Moderator variables (C, EDS) assessed pre-lab.

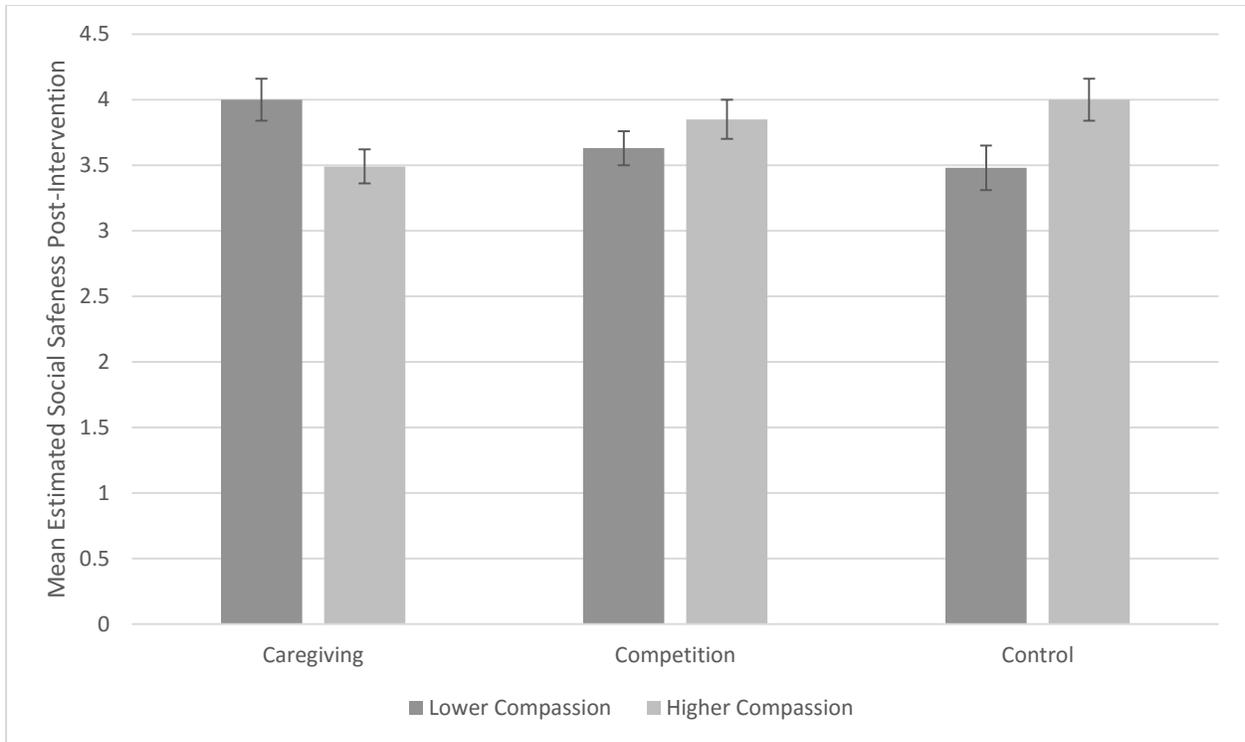


Figure 1. Trait compassion moderates the effect of condition on social safeness. Controlling for pre-intervention social safeness, in the Caregiving condition, those with lower trait compassion reported higher social safeness relative to their counterparts in the Competition condition, while those with higher trait compassion reported lower social safeness relative to their counterparts in the Competition condition. Lower/higher compassion represents -1/+1 standard deviation from the mean.

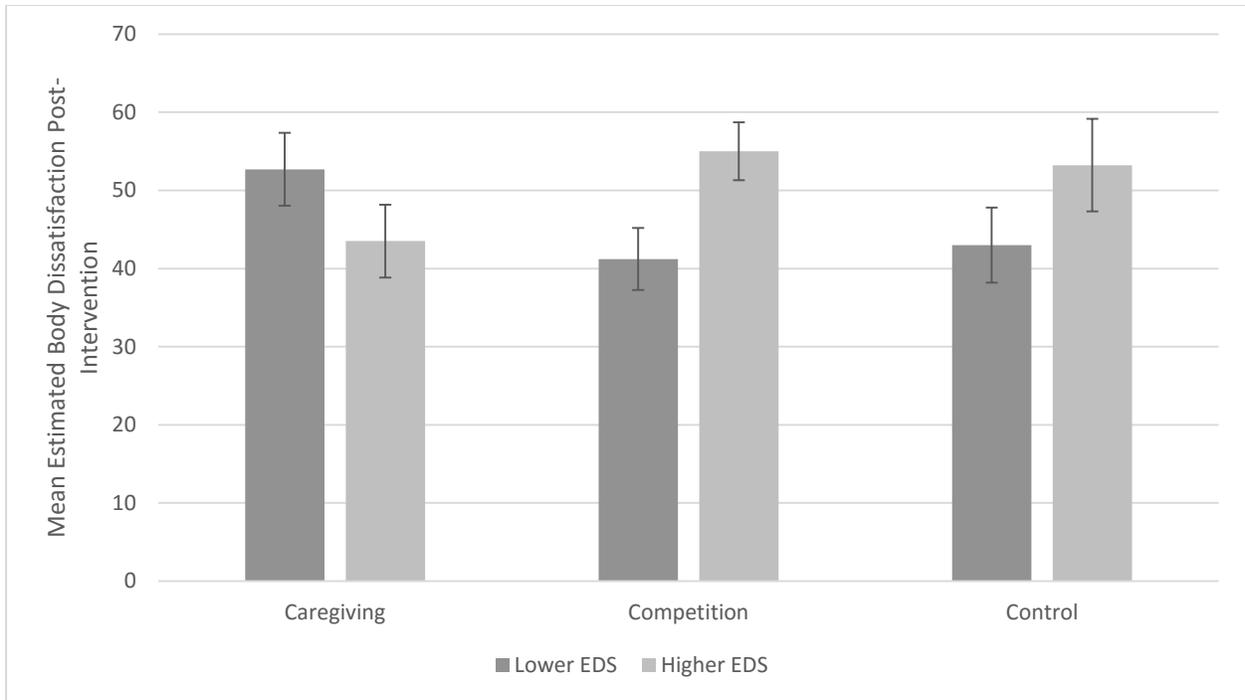


Figure 2. Baseline eating disorder symptomatology (EDS) moderates the effect of condition on body dissatisfaction. Controlling for pre-intervention body dissatisfaction, in the Caregiving condition, those with higher baseline EDS reported lower body dissatisfaction relative to their counterparts in the Competition condition, while those with lower baseline EDS reported higher body dissatisfaction compared to their counterparts in the Competition condition. Lower/higher EDS represents -1/+1 standard deviation from the mean.

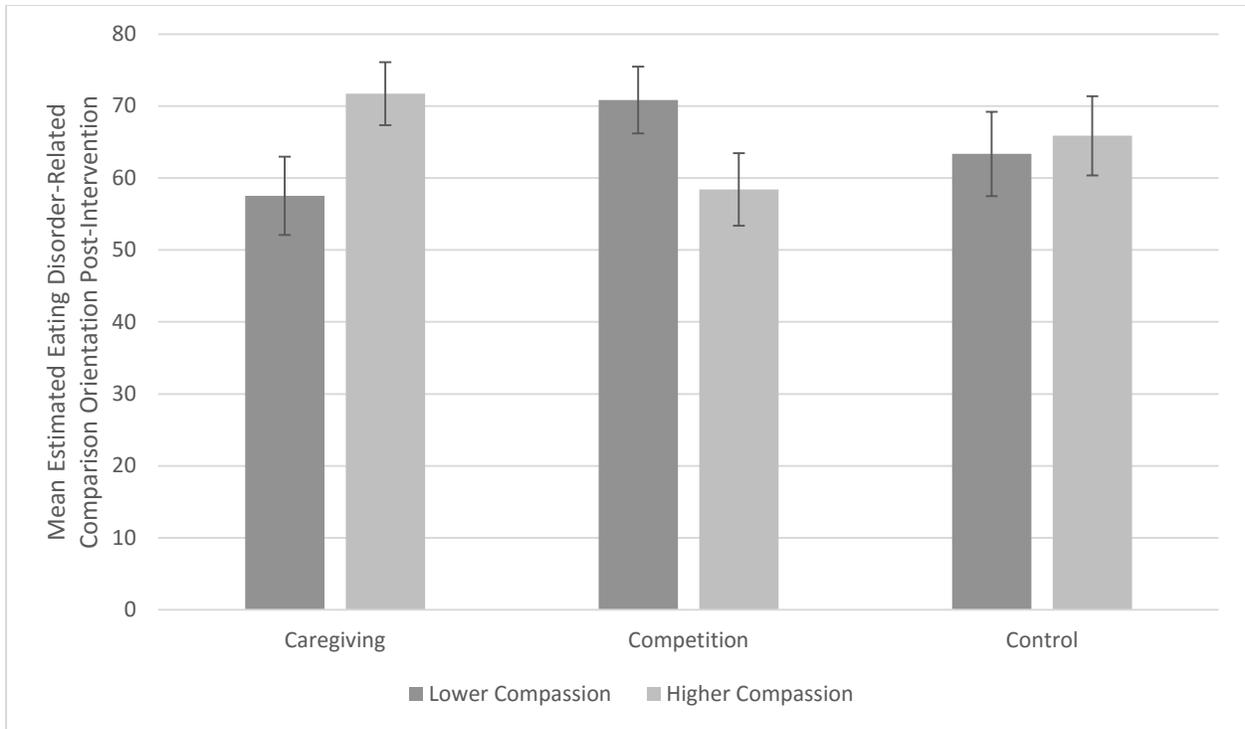


Figure 3. Trait compassion moderates the effect of condition on eating disorder-related comparison orientation. Controlling for pre-intervention eating disorder-related comparison orientation, in the Caregiving condition, those with lower trait compassion reported being less oriented to make eating disorder related-comparisons relative to their counterparts in the Competition condition, while those with higher trait compassion reported being more oriented to make eating disorder-related comparisons relative to their counterparts in the Competition condition. Lower/higher compassion represents -1/+1 standard deviation from the mean.

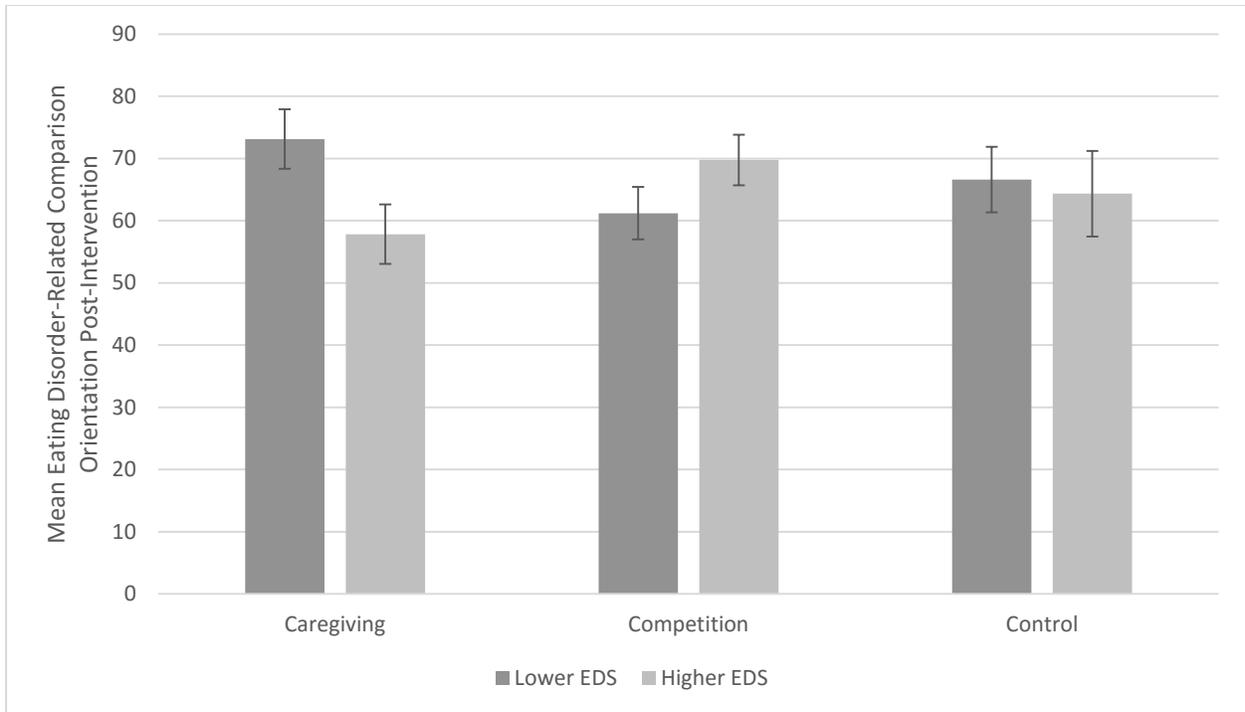


Figure 4. Baseline eating disorder symptomatology (EDS) moderates the effect of condition on eating disorder-related comparison orientation. Controlling for pre-intervention eating disorder-related comparison orientation, in the Caregiving condition, those with higher baseline EDS reported being less oriented to make eating disorder-related comparisons relative to their counterparts in the Competition condition, while those with lower baseline EDS reported being more oriented to make eating disorder-related comparisons relative to their counterparts in the Competition condition. Lower/higher EDS represents $-1/+1$ standard deviation from the mean.