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Focus and Scope
The articles that appear in NSPB represent the work of students from graduate psychology departments. Published work includes theory, research, literature reviews, and commentaries on the field. NSPB considers articles from all schools of thought on all topics relevant to psychology. NSPB may be particularly attractive to authors whose work does not fit the missions of larger psychology journals, and those looking to gain exposure to academic publishing. NSPB prides itself on publishing the early work of new and budding scholars.

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To Village Copier for printing this issue.

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Acknowledgements

We would like to thank our authors, whose hard work has resulted in this special issue. To create an issue that focuses on such important topics has truly been a rewarding experience. We are very excited to share these articles with our readers, which as editors we found so fascinating, enlightening, and valuable. We would also like to acknowledge and thank our editorial board members - the reviewers who have devoted their time and effort to make this issue possible. Each and every board member is incredibly valued. We are also thankful for the supporters of the NSPB, especially the Psychology Department at The New School for Social Research (NSSR). We thank Alyson Aladro, the NSPB's Layout Editor for her *excellent* work. Alyson has worked with the journal longer than any student ever has, designing and re-designing the journal's interior and exterior look each year. Her patience, hard-work, and attention to detail are greatly appreciated. Finally, we thank you, our readers, for your support and attention, which directly contributes to graduate student scholarship. We hope you enjoy this issue.

Letter from the Editors

Dear Readers,

We are pleased to present to you our special Body Image issue of the *New School Psychology Bulletin* (NSPB), which features articles that address body image dissatisfaction, weight stigmatization, culture, and development.

The study of body image is especially important in a contemporary culture that idealizes beauty. There is too often a feeling of incongruence between an individual's body image and the societal standards of beauty. The extreme measures one may take to live up to these societal standards – eating disorders, excessive body modification, etc. – have tremendous implications for physical and psychological well-being.

In this issue, we have articles that address body image disturbance, examining its origins via attachment theory and through the lens of socio-cultural perspectives. It is the integration of various forces of influence that enhances our understanding of body image dissatisfaction's etiology, so that we may implement successful interventions and treatment on both a familial and socio-cultural level.

This special issue features a detailed review article of various perspectives of body image development, a study utilizing a new and unique tool for assessing various influences on perceived body image and eating disorders, and an experimental examination of factors that impact weight stigmatization. The issue concludes with the introduction of a new Body Dissatisfaction Scale designed to maximize experimental control when assessing body image dissatisfaction. These articles highlight a topic of immense importance, offering insight into its psychological underpinnings and providing tools to examine relevant factors. We sincerely hope that you enjoy this issue, and learn as much from it as we have.

Finally, we want to say farewell, as our tenure as Editors has now come to an end. Serving the NSPB has been a unique experience that will leave a lasting impression. We would also like to take this opportunity to welcome next year's Editors. Jessica Englebrecht and Mariah HallBilsback will assume the responsibilities of Co-Editors and Emily Maple will serve as Assistant Editor. We are confident that we are placing the NSPB in the care of three highly capable and motivated individuals, and we are eager to witness the future and growth of the journal.

Clinton Merck, Jordan Hill & Batya Weinstein
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The Development of Body Image in School-Aged Girls: A Review of the Literature from Sociocultural, Social Learning Theory, Psychoanalytic, and Attachment Theory Perspectives

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This paper outlines the research that has been conducted on the development of body image in young children, particularly in girls. Beginning with a detailed understanding of the developmental progression of body image, and its relationship to self-concept in early life, this review continues to explore the various theoretical perspectives on how body image and body esteem develop at young ages. The research from attachment theory and other psychoanalytic theories, social learning theory, and sociocultural perspectives are reviewed in detail. The review of this literature explains the multiple influential factors on body image and body satisfaction throughout the lifespan. This paper also highlights the need for more empirical research regarding the influence of early parent-child relationships on the full spectrum of body image dissatisfaction, which has become so prevalent amongst women and girls in Western society.

Keywords: body image, attachment theory, self-concept

Throughout development, the body plays an important role in psychological growth. Physical attributes and associated changes, social environments, and societal messages are all powerful influences regarding the way we think and feel about our bodies. The various mental representations that we form about our bodies in different stages of life and contexts constitute the *body image*, which has a profound impact on self-esteem, identity, mental health, and social functioning. This important fact has been studied extensively by cognitive psychologists, philosophers, psychoanalysts, sociologists, behavioral psychologists, neuropsychologists, and developmental psychologists (Cooley, 1902; Harter, 2012; Kernberg, 2007; Krueger, 2002a; Lemma, 2010; Meissner, 1997). Integrating the literature from these various fields, this paper will discuss various components of body image: theories on its early developmental trajectory, evidence for its robust link with self-esteem, powerful sociocultural influences, and its intergenerational transmission within families.

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Body image is a term used to describe the subjective mental representations an individual develops regarding his or her body based on "sensory, motor, and affect (both pleasurable and unpleasureable) body experiences" (Meissner, 1997, p. 428). Researchers have identified two components of body image: perceptual and attitudinal (Gardner, 2002). The perceptual component refers to the accuracy of an individual's perception of his or her body size and shape; the attitudinal component refers to the emotions associated with these perceptions. These perceptual and attitudinal body representations develop over time and ideally become integrated, forming a cohesive body image. Psychoanalytic theorists believe these images begin to form during infancy, in interaction with caregivers, and are the foundation for self-concept (Kernberg, 2007; Krueger, 2002a; Meissner, 1997; Winnicott, 1971). Freud's assertion that "the ego is first and foremost a bodily ego" demonstrates this historical understanding of the body being a very crucial component of the self (S. Freud, 1923, p. 26).

The significant relationship between body esteem and more global evaluations of self-worth has been established by research on individuals of all ages

(Harter, 2012; Smolak, 2002). In her assessments of the relationships amongst various domains of self-esteem in children and adolescents, Susan Harter (2000) found that "at every developmental level, the evaluation of one's looks takes precedence over other domains as the Number 1 predictor of self-esteem" (p. 134). Children as young as five and six years old have been identified as having some level of body dissatisfaction, a notion of a slender body ideal that exists, and an awareness of the concept of dieting (Davison, Markey, & Birch, 2003; Lowes & Tiggeman, 2003; Smolak, 2002). Body image disturbance at young ages can predict the later development of eating disorders, and is a risk factor for low self-esteem and poor psychosocial functioning (Harter, 2012). In addition, the development of a healthy body image is essential for the cohesive development of a sense of self and a sense of identity (Buhl-Neilsen, 2006; Krueger, 2002a).

Body image is frequently mentioned in the context of body image dissatisfaction, having been identified as a normative discontent amongst women in Western society, and a growing issue for men as well. In this society, slenderness of the female figure is generally preferred, and being overweight, "obese," or "fat" comes with a range of negative connotations and social implications (Grogan, 2007). The media presents to the public an extraordinarily slender female as the ideal body type, an impossible body for most women to achieve. In perceiving one's own body compared to an impossible ideal, most women experience some dissonance, and subsequently, dissatisfaction (Lemma, 2010). Women receive messages that they need to be doing more to achieve the ideal, that "their corporeal bodies are unacceptable" needing constant "sanitizing, deodorizing, exfoliating, and denuding" (Harter, 2012, p. 167). Women's bodies are also sexualized – in the media and in daily interactions – in a "culture [that] is saturated by heterosexuality" (Fredrickson & Roberts, 1997, p. 175). As a result of existing within this objectifying society, women experience themselves as objects – internalizing the gaze of the other. As such, it is more common for a woman to wonder, "How do I look?" than "How do I feel?" (Fredrickson & Roberts, 1997).

While body image concerns are often not considered pathological unless disordered eating habits are involved, there is strong evidence that body image maintains a powerful influence on overall self-esteem and thus, mental health and social functioning (Harter, 2012; Tantleff-Dunn & Lindner, 2011). With this in mind, it is important to consider the wide range of experiences of body image dissatisfaction amongst women, as we identify the contributing factors, risk factors, and protective factors of this normative discontent. It is also important to consider the negative implications that body dissatisfaction can have on an individual's mental health at any point on this spectrum of dissatisfaction and at various stages of development.

The Development of Self-Concept and the Body

The term *the looking glass self* refers to the way in which people see themselves through interaction with the other – evaluating themselves based upon how others might perceive them (Cooley, 1902). In Susan Harter's (2012) words: "We gaze at ourselves in real mirrors and we anticipate the evaluations of others, as social mirrors" (p. 159). The term highlights the influence of body image on self-concept, because we begin to think about what others see when we look at ourselves in the looking glass (or mirror) at a young age. William James (1890), too, described a state of self-evaluation that involves seeing the self as both the subject (from your own perspective) and as an object (from another perspective). The "Social Self," as he termed it, consists of two parts: the "Me-Self," referring to the awareness of the self as an object, versus the "I-Self," which refers to a subjective self-awareness. These concepts draw on the idea that we see ourselves from varying perspectives – namely our own self-view and the perceived view of the other. This ability to take the perspective of others has a developmental progression, beginning with the development of preliminary self-awareness in toddlerhood and later self-conscious emotions (such as pride, shame, and embarrassment), and ultimately the capacity for mentalization (Rochat, 2003). The child goes through cognitive and psychological developmental phases that define her self-image and body image from infancy through middle childhood, and have important implications for later developments in body esteem and self-esteem. All of these stages of development involve interactions

with significant others – it is the dynamic relationship between caregiver and child, and the child's later interactions with peers and social environments, that facilitate and influence the development of one's body and self-awareness.

In order to discuss the developmental pathways of self-awareness and body image, we must start at the beginning – at birth. There are various views on the experience of the newborn infant and the degree of self-awareness that she possesses. Classical psychoanalysis tends to view the newborn infant as "fairly asocial," interpreting the mother-infant interactions as mostly matters of physiological regulations (Stern, 1985, p. 44). Anna Freud (1989) suggested that the infant wishes to be merged with the mother in the very early months of her life, possessing no sense of a boundary around herself, understanding the mother's body parts as simply an extension of her own due to the fact that "in early life the distinctions between the internal and external world are based not on objective reality but on the subjective experiences of pleasure and unpleasure" (p. 69). Cognitive psychologist Phillippe Rochat (2003) argues that this earliest stage (which he labels "Confusion") is the lowest level of self-awareness and, contrary to Anna Freud's theory, is characterized by the ability to differentiate between one's own body and another's body, between oneself and one's environment. There is certainly some disagreement regarding the experience of the very young infant, but, at the very least, the boundaries between self and other are blurry and confused for the newborn infant. As Daniel Stern (1985) writes, "All of these clinical theories have a common assertion: That infants have a very active subjective life, filled with changing passions and confusions, and that they experience a state of undifferentiation by struggling with blurred social events that presumably are seen as unconnected and unintegrated" (p. 44).

By two months of age, the infant is already exploring the environment and can observe the impact of her actions on the environment (Rochat, 2003). This period is also characterized by interactions with the caregiver, and the infant develops an awareness of her body through the tactile sensations she experiences when being held, fed, changed, and touched by her mother. The experience of being touched by her caregiver helps the infant shape her body boundaries, knowing where her body surface begins and ends. This is the very beginning of body image development (Krueger, 2002b).

During the first year, the child begins to develop an understanding of herself and her body as separate and autonomous, within the context of her caregiving environment, and she begins to integrate her inner sensations with external experiences (Krueger, 2002a; Mahler, Pine, & Bergman, 1975). During this period, the infant begins to observe her external environment and is definitively able to differentiate between her own body and her mother's, even beginning to compare strangers to her mother (A. Freud, 1989; Mahler et al., 1975). Lemche (1998) refers to this period as the "Cohesion versus Fragmentation Phase," during which the infant experiences a sense of body wholeness, which is quite dependent on the mother's attunement:

> [The infant] explores his objective surroundings, feels the body of his mother in exchanges, or playfully touches his own body parts. The sensations that arise from this contribute, for example, to his experiencing his feet as belonging to his body, far away though they may be. (p. 233)

Lemche goes on to describe that a feeling of cohesiveness only comes from the mother's ability to sufficiently match the child's affect, and without this matching, the child experiences fragmentation of body image. Throughout the stages of development discussed here, affect attunement by the caregiver is a key component to optimal development.

By the end of the first year and the beginning of the second year, there are two separate but simultaneous developmental paths: separation and individuation. Individuation involves the development of autonomy and cognition, while separation involves boundary formation and differentiation (Mahler et al., 1975). "All of these structuralization processes will eventually culminate in internalized self-representations as distinct from internal object representations" (Mahler et al., 1975, p. 63). In other words, the development of the child's autonomy and differentiation from the caregiver are essential in order for her to begin to

form representations of her self that are distinct from representations of the object/caregiver.

The contingency between inner proprioception and outer movements is another important contribution to the child's development of a cohesive body experience and body image during the first year of life (Lemche, 1998; Lemma, 2010). The infant's awareness of her internal body sensations and how they affect her external movements helps her develop a coherent body image – involving both the inside and the outside of her body. By 15-months, the infant is also able to recognize her body as a "container" of her psychological self (Krueger, 2002a). This stage, according to Krueger (2002a), is characterized by the ability to possess a "stable, integrated, cohesive mental representation of one's body" (p. 31).

By age two, self-recognition is accomplished, which is interpreted as representing the development of self-conscious emotions and an *objective self-awareness* (Lewis, 1991). This self-recognition has been demonstrated in various studies using the mirror mark test, a task that requires self-recognition in the mirror as well as an understanding of contingency between the self and the reflection (Lewis, Sullivan, Stanger, & Weiss, 1989). This capacity requires the toddler to see herself as both the subject, existing in her own body (William James' "I-Self"), as well as an object, seeing and recognizing her body from the outside (William James' "Me-Self"). It is in the latter half of the second year of life that the child develops *body awareness* – that is the ability to observe how her body interacts with her environment (Brownell, Zerwas, & Ramani, 2007; Moore, Mealiea, Garon, & Povinelli, 2007). Brownell and colleagues (2007) assessed body awareness using tasks that required the toddler to accurately assess her own body size and perceive her body as an obstacle, finding that the earliest mastery of these tasks occurred at 27 months, but errors continued at 30 months for many. This stage is described by the authors as "a developmental bridge between the kinesthetically based awareness and discrimination of one's own body evident in infancy and the more complex psychological self that develops over childhood and adolescence" (pp. 1427-1428).

By age three, the child is able to grasp the concept of an *enduring self* (meaning that she understands that she is the same person she was yesterday and will be the same person tomorrow), can grasp the concept of a *body image* (i.e., an internal representation of her body shape and size), and is able to symbolically represent aspects of her body using language (Lemche, 1998; Rochat, 2003; Tremblay, Lovsin, Secevic, & Lariviére, 2011). Tremblay and colleagues (2011) conducted a study with three-year-old girls that evaluated the accuracy of their body representations compared with adult representations of their bodies, in order to assess whether inaccuracies regarding body size perception were due to developmental limitations. Because children's body size perceptions, measured by a simplified figure rating scale, were as frequently inaccurate as their parents' perceptions of their body size, the authors concluded that 3-year-old children are as capable of representing their body size as adults are, and therefore have a concept of body image (Tremblay et al., 2011). Lemche (1998) describes the three-year old's experience of her body as the "introspection phase" during which "the small child acquires the possibility to refer directly to his inner experience within the outer boundaries of the body image" (p. 245). In other words, she can now use words to describe her inner sensations and mental states (i.e., wanting, liking, loving, being afraid), thereby further establishing her coherent sense of self and body.

At the ages of four to five, the child begins to develop higher levels of self-awareness, which Rochat (2003) refers to as *evaluative and meta-cognitive self-awareness*. It is at this stage that we see the more sophisticated development of Cooley's (1902) *looking glass self*.

> The process of imagining what others might perceive or judge about the self, whether this imagination is implicitly or explicitly expressed, is linked to the cognitive ability of running a simulation of others' minds as they encounter the self. There is a fantasy and phantasms involved, the stuff that feeds the self-conscious mind and characterizes the meta-cognitive level of self-awareness (Rochat, 2003, p. 728).

Here, Rochat describes the capacity for a theory of mind or mentalization, and how this cognitive

capacity influences the developing sense of self. Fonagy, Gerbely, Jurist, and Target (2004) explain this capacity for theory of mind as developing from the capacity to understand the representational nature of others' *intentional mind states*. This capacity has been linked to the simultaneously developing capacity for autobiographical memories – the child's personal experiences begin to become encoded as exactly that – her personal experiences. Her personal memories become more solidified and contextualized, having implications for the developing self and body representations. Her memories begin to more clearly shape how she views herself and her interactions with others.

By ages six and seven, the child is more highly aware of the perspectives and the evaluative nature of others, and begins to internalize these evaluations further, integrating the perceived views of others into an overall sense of self, self-esteem, and identity (Harter, 2012; Selman, 2003). The beginning of concrete operations at this age also allows for a more accurate body image, with an increased capacity for abstract reasoning (Krueger, 2002b). The further development of the capacity to mentalize helps children to "conceive of others' feelings, intents, desires, knowledge, beliefs, and thinking, [which] leads to an integration of the body self. This integration contributes significantly to affect and tension regulation, impulse control, self-monitoring, and the emergence of self-agency" (Krueger, 2002b, p. 31). Interpersonal interactions, initially with caregivers and later with peers and others, facilitate the development of reflective capacities in children. This capacity for reflective functioning, along with a solidifying representation of one's body, continues to develop in relation to the social environment. At the same time that children are becoming aware of the evaluative nature of others, and thus evaluating themselves, they are also becoming aware that there is a body type that is considered ideal by society's standards (Dohnt & Tiggeman, 2005). In addition, they are learning that there is a societal bias against overweight people, interacting more with peers at school, being increasingly exposed to media (and better understanding its messages), and becoming increasingly self-aware and self-conscious. It would be no surprise, then, that this newly forming process of self-evaluation would not only apply to the self but also specifically to the body.

This brief outline of the development of self-awareness from infancy to middle childhood describes the trajectory from confusion to separation-individuation to objective self-awareness to mentalization. The final stage of mentalization, as it relates to self-awareness and self-evaluation, continues to develop past middle childhood and influences the individual's growing sense of self and body self. It has been found in various studies that children begin expressing body image dissatisfaction at around ages five and six, when this mentalizing capacity begins to emerge (Dohnt & Tiggeman, 2006a; Smolak, 2011). Body dissatisfaction has been found to increase with age in children and adolescents (Harter, 2012), but it seems that the stage is set early on in the child's life with regard to how she will feel about herself and her body, and how her body image will develop along with her growing physical body.

Body Image, Attachment Theory, and Self-Esteem

The body, as the container of the psychological self, plays a crucial role in the development of self-concept and identity. When all is going well in development, one's body representations make up a cohesive body image, which in turn helps the individual develop a cohesive sense of self (Buhl-Neilsen, 2006). With a fragmented body image or a sense of the body as being ugly or disgusting, the self, too, is felt to be fragmented or ugly. Empirical research has repeatedly established the link between body esteem and self-esteem, illustrating the important role the body plays (at varying stages of development) in overall self-evaluation (Allen, Byrne, Blair, & Davis, 2006; Blond et al., 2008; Harter, 2000; Harter, 2012).

Self-esteem is a broad concept, which refers to overall feelings of self-worth, often formulated by taking the perspectives of others (Rosenberg, Schooler, & Schoenbach, 1989). This construct is understood as a global evaluation of the self, made up of various domain-specific evaluations (e.g., appearance, athletic ability, intellect). Of all of the many different domains, appearance seems to consistently be the most powerful influence over global evaluations of self (Harter, 1999, 2012). Harter (2012) has found

this powerful association between global self-esteem and appearance related self-esteem to be true in various studies of children and adolescents at every developmental stage. In addition, this relationship between self-esteem and body esteem is stronger for girls, and beginning in middle childhood (increasing throughout development) perceptions of physical appearance are more negative for girls than boys (Harter, 2000).

The inextricable link between self-esteem and body esteem can be traced back to the early models of self developed during infancy and childhood, in relation to their caregivers. In his formulation of attachment theory, John Bowlby (1988) described the child's attachment behaviors (e.g., clinging to mom when afraid) serving a distinct biological purpose: to be protected. By appropriately and sensitively attuning to the child and tending to his or her needs, the caregiver can create a "secure base" from which the child can explore, as well as a "safe haven" to return to when she is in need of protection. "How well attachment relationships can fulfill these safe-haven and secure-base functions, however, turns not only on attachment partners' actual behaviors, but on the translation of their interaction patterns into relationship representations – or, as Bowlby termed them, 'internal working models'" (Bretherton & Munholland, 1999, p. 90). Bowlby's (1988) concept of internal working models (IWM) refers to the cognitive maps of the self and other, developed during infancy. They are self-representations formed from how acceptable children feel in the eyes of their primary attachment figures (Buhl-Neilsen, 2006). From the child's experience with her caregivers, she develops expectations of how she will be cared for, as well as thoughts about the kind of care that she deserves. As such, IWMs have a clear relationship with the development of a child's feelings of self-worth, and as it is conceptualized as a model developed early on in the brain, it continues to influence relationship patterns and self-esteem throughout development, though not without the opportunities for change (Bowlby, 1973).

Importantly, the child's IWMs also have a good deal to do with his or her body, as "attachment needs are first and foremost body based needs" (Krueger, 2002a, p. 4). The kind of care, attention, physical touch, gaze, and holding the child receives from the caregiver will influence the way she thinks about her own body, feels in her body, treats her own body, and expects others to treat and view her body. Alessandra Lemma (2010) emphasizes the degree of the mother's "desire" for the baby and the baby's body: "The too-desiring or the not desiring enough mother inscribes the body and profoundly shapes the development of the body self" (p. 2). These body-specific interactions with caregivers may inform body-specific IWMs, influencing the individual's sense of her body's worth, attractiveness, and desirability. Krueger (2002a) hypothesizes that another process may also occur, influencing body esteem from these early stages. He explains that the more general feelings about the self, developed from early interactions with caregivers (i.e., internal working models) get funneled into feelings about the body: "The conclusions from unmet developmental needs and core organizing assumptions of the self, if they are of inadequacy and defectiveness, may be woven into body image" (Krueger, 2002a, p. 115). By this account, it is the direct care and attention our bodies receive as infants, as well as the emotional needs that are or are not met, that influence both a global sense of self-worth as well as body esteem.

It is clear that the development of body esteem and self-esteem are linked from early stages. Harter (2012) provides another explanation why appearance is so frequently the subject of self-evaluation, even in the early years when self-evaluative processes are just beginning to emerge, writing that appearance "is an omnipresent feature of the self, it is always on display for others, or for the self, to observe, scrutinize, and judge" (p. 159). Harter (2012) adds that another important reason why our appearances are under so much "self-scrutiny" is because of the cultural and societal attention towards certain standards of beauty and weight in the media. When understanding Harter's (2012) rationale for why appearance esteem has such a strong impact on global self-esteem, we can also refer to Objectification Theory, which highlights the particular salience of the body for women and girls, even more than overall appearance (Fredrickson & Roberts, 1997). As previously described, Fredrickson and Robert's (1997) theory posits that the societal sexualizing of female bodies causes women to self-objectify – that is, to view their own bodies as the

objects that others see. Women are thus particularly focused on how they appear to others, and they are situated in a society that views them as objects, thereby making their external appearances seemingly more important than their internal worlds or other aspects of the self.

While there is a clear association between body esteem and global self-esteem, there are mixed results in the literature pertaining to the directionality of this relationship – whether it is dissatisfaction with one's body that causes one to feel bad about him or herself in totality, or a low overall sense of self-worth that contributes to the negative evaluations of one's body. According to Krueger (2002a), a sense of self-hatred, low self-esteem, and shame are often manifested in body image and low body esteem, suggesting that a low opinion of oneself overall leads to low body esteem. He writes: "Shame may reflect core fantasies about the self that may manifest in body image" (Krueger, 2002a, p. 115). However, the combined results of various empirical studies show that there are individual differences in the directionality of this process (Harter, 2012). Several longitudinal studies have shown that BMI coupled with negative perceptions of physical appearance are precursors of later negative global self-esteem (Harter, 2012; O'Dea, 2006; Tiggeman, 2005). Additionally, in a study of subjective self-reports regarding the directionality of appearance perception on self-esteem, the mental health consequences were direr for female adolescents endorsing the case of appearance influencing self-esteem. Such adolescents had higher occurrences of depression and negative affect (Harter, 2012). From this finding, it can be concluded that when emphasis is placed on appearances such that it causes global evaluations of the self to be negative, the individual will suffer more than if overall low self-esteem influences low body esteem.

Body Image in Children: Sociocultural Influences

> The thinness mandate for females includes clear directives that beauty is a woman's principle project in life and that slenderness is crucial for success and to attract the interest of males. From a biological growth perspective, the cultural ideal of long legs, thinness, and low percentage of body fat is closer to the first stages of puberty than the end of puberty, bringing wider hips and more body fat. Attempts to adhere to the cultural ideal of beauty, therefore, derails…girls from normal, healthy development.
>
> –Susan Harter, 2012, p. 166

The societal pressures on women to achieve a specific ideal body type are so pervasive that children begin to hear, internalize, and express such messages at young ages, beginning at around age five or six (Davison et al., 2003; Dohnt & Tiggeman, 2005, 2006a, 2006b; Smolak, 2002, 2011; Tremblay et al., 2011). Sociocultural influences – namely the media, certain types of toys, parents, and peers – have been identified as having a powerful impact on the child's internalization of cultural beauty ideals (Tiggeman, 2011). Studies of body image in children use assessment measures that include silhouette figure rating scales, body size estimation techniques, interviews, and questionnaires to determine children's perceptions of and attitudes toward their bodies (Gardner, 2002). Many of these studies, too, employ assessments of the child's exposure to media and the child's interactions with and perceptions of peers in order to better understand the various sociocultural influences on the child's body esteem. Family also plays an important role as a sociocultural transmitter of body ideals. The multifaceted ways in which family influences body image will be further discussed in the following section.

To assess the power of certain toys as sociocultural transmitters of body image ideals, Dittmar, Halliwell, & Ive (2006) investigated the effects of exposure to images of Barbie dolls on the child's desire for thinness. In this study, 5 to 8-year-old girls were exposed to images of Barbie dolls, neutral images (control condition), and Emme dolls (made to represent a size 16 woman). Girls showed decreased body esteem and an increased desire for thinness after being exposed to Barbie images, whereas this effect was not found in the other two conditions. This effect was stronger in younger girls (ages 5 ½ to 7 ½) than in older girls (7 ½ to 8 ½). This latter finding was interpreted by the authors as demonstrating the susceptibility of younger children to the influence of dolls, whereas for the older children it is thought that the messages about thinness and body ideals have

already likely been internalized, thereby limiting the added influence of the doll's body shape. The authors concluded that the experimental condition had more of an effect on the children who have not yet had the chance to internalize these messages as completely. This study represents the effect that a toy can have on a young girl, and is explained as having a rather profound impact due to the fact that children use this toy in fantasy play, thus taking the perspective of the doll, taking on her identity, and inevitably desiring her physical qualities (Dittmar et al., 2006).

In addition to Barbie dolls, the influence of peers and various forms of media (e.g., magazines and television) have also been established as being major contributors to the early emergence of body image dissatisfaction. Dohnt and Tiggeman (2005) evaluated the effect of peers on body image dissatisfaction and dieting awareness in girls in the first three years of school (ages 5 to 8). They found that older girls (mean age 7.11) expressed a greater understanding of dieting, but dieting awareness was correlated at all ages with the child's body dissatisfaction, her peer's (perceived) body dissatisfaction, awareness of teasing based on weight, and awareness of likeability based on weight. When running a regression, the authors found that peer's body dissatisfaction was the only significant predictor of the child's own body dissatisfaction. These same authors conducted a study evaluating the causal role of peers and media on body dissatisfaction of girls ages 5 to 8 in a longitudinal study (Dohnt & Tiggeman, 2006a). The child's body satisfaction was evaluated, as well as her global self-esteem, perception of and imitation of peers, and exposure to the media. Participants were invited for two visits twelve months apart to determine the temporal effect of these influences. The effect of media exposure on body satisfaction was not significant. However, the girls who perceived that their peers desired a thinner body at their initial assessment showed less body satisfaction twelve months later. This finding indicated the significant effect that a child's perception of her peers can have on her own body ideals, above and beyond the effect of exposure to the media.

While Dohnt and Tiggeman (2006a) did not find a significant effect of the *amount* of media consumed by children on their body dissatisfaction, Hargreaves and Tiggeman (2003) found that the type of media attended to by children did have an effect on body satisfaction. In their study, adolescent girls and boys (ages 13-15) were divided in two groups – one group was shown beauty- and appearance-oriented commercials and the other was shown non-appearance-oriented commercials. Girls, not boys, who watched the appearance-oriented commercials showed more body dissatisfaction. This study shows the specific effect of media with certain appearance-oriented content, as well as gender differences regarding the internalization of this content. These gender differences may be explained by Jung and Peterson's (2007) study evaluating what girls are attending to when they are watching television or reading magazines, and how this differs from boys. Jung and Peterson conducted a study with 8- to 11-year-old girls and boys, evaluating their body dissatisfaction, BMI, and media habits (i.e., frequency, content, and preferences). With regard to media preferences, they found that boys paid attention to athletic ability and muscularity, whereas girls showed more interest in beauty and relationships. At this prepubertal stage, boys expressed on a silhouette figure rating scale that they desired a heavier body type than their actual body as measured by BMI (but not heavier than their perceived body type – indicating that they often perceived themselves as having reached the ideal, showing no body dissatisfaction). Girls, however, "exemplified a deluded perception skewed toward being thinner even though they were at their ideal" (Jung & Peterson, 2007, p. 51). They expressed a desire to be three BMI units less than their current perceived body type; however, their ideal body type almost exactly matched their actual body type as measured by their BMI. The authors concluded that these gender differences in body perception and ideal body types are related to the gender differences in media consumption habits.

While the societal ideals presented in the media have been shown to have a powerful effect on body image satisfaction throughout development, particularly in women, this effect varies greatly, as indicated by the wide spectrum of body image dissatisfaction that is exhibited amongst women and girls. The mechanisms that mediate the link between societal ideals and body dissatisfaction

have been identified as internalization of ideals, social comparison, and perceived pressure from the media (Tiggeman, 2011). Bell and Dittmar (2011) conducted a study with adolescent girls showing the important role of the individual's *identification* with the thin female characters presented in the media and subsequent internalization of body ideals and body image dissatisfaction. The authors evaluated participants' media consumption habits, body dissatisfaction, and how much they identified with female models in the media (internalizing their thinness as a personal goal). The findings revealed that the amount of media consumption and type of media consumed did not significantly predict body dissatisfaction, but identification with the thin female model did predict body dissatisfaction across all genres. Cheng and Mallinckrodt (2009) conducted a study with young adult women with the aim of identifying whether positive parental relationships served as a protective factor in the process of internalization of media messages. They found that warm memories of parents led to a secure adult attachment style, which in turn led to less internalization of media messages. This finding is an example of how parenting can contribute to or buffer against the internalization of what is presented in the media. Clearly the *tripartite model* – parents, media, and peers – suggested by the theories of sociocultural influences on body image interact in complex ways (Tiggeman, 2011; Rodgers, Paxton, & Chabrol, 2009).

Family Influences on Body Image: Social Learning Theory

As previously stated, family is considered one important part of the sociocultural theory of the development of body image dissatisfaction. Parents are considered important sociocultural transmitters of messages about the body. There are two main theories about how parents directly influence their child's body image: (1) parents model body image and eating behaviors for their children and (2) parents express specific attitudes toward the child's weight – i.e., teasing, criticizing, or encouraging (Rodgers et al., 2009). The first of these theories is aligned with Social Learning Theory. "In the social learning system, new patterns of behavior can be acquired through direct experience or by observing the behavior of others" (Bandura, 1971, p. 3). Other theories about parental influence on the development of body image focus on more indirect mechanisms of transmission – the quality of the parent-child relationship itself and the early nonverbal interactions between mother and infant being important factors in the development of body image.

Research has been conducted on the intergenerational transmission of dietary habits and eating disturbance, which is often related to body image dissatisfaction. The assumption is often that parental modeling and direct commentary play a major role in this transmission, though some studies point to other underlying factors that need to be further explored. Hill and Franklin (1998) conducted a study with 11-year-old girls, half of whom had high restraint dietary practices. Findings indicated that mothers of the high restraint girls rated their daughters significantly less attractive than mothers in the comparison group. Additionally, high restraint dieters had less family cohesion, organization, and moral-religious emphasis in their families. The findings of this study suggest that the mother's view of the daughter's appearance affected her eating habits and weight concerns in some way. Additionally, a more chaotic and fragmented family environment may have more indirectly shaped the eating habits of these pre-adolescent girls (Hill & Franklin, 1998). Davison and colleagues (2003) conducted a study with five-year-old girls and their parents to investigate whether there were associations between parents' weight concerns and body image dissatisfaction and their daughter's body image and weight concerns. They found a positive association between mother and daughter weight concerns (but not the father's), independent of the child's weight status and body image dissatisfaction. This study emphasizes the direct transmission of weight concerns from mother to daughter, as separate from body image dissatisfaction. In a study of girls and boys (ages 5 to 8), Lowes and Tiggeman (2003) found that gender (i.e., identifying as female) and perception of mother's body dissatisfaction were predictors of body dissatisfaction, and girls perceived more parental control over eating than boys did. Another study, conducted by Fulkerson and colleagues (2002), found the effects of diet encouragement from mothers to be

stronger for adolescent boys than girls, interpreted by the authors as suggesting that girls at this age were already exposed to many weight concerns and dieting behaviors, and are thereby less vulnerable to parental comments. Boys, however, who were encouraged to diet by their mothers were more at risk for exhibiting unhealthy eating habits such as dieting, binge-eating, fasting, and skipping meals. This result is in contrast with the results from Smolak, Levine, and Schermer (1999), who found that maternal comments had more of an effect on girls than boys in a fourth and fifth grade sample. This study also found that the mother's direct commenting was a stronger predictor of daughter's concern about body shape than mother's modeling of behaviors. In a study of undergraduate students that used a retrospective measure of parental influences, Abraczinskas, Fisak, and Barnes (2012) determined that both parental modeling and "direct influence" were associated with eating disordered behaviors – specifically a drive for thinness and bulimia symptomology. These correlations remained significant even after controlling for the influence of media and peers, suggesting a unique pathway for the influence of parenting on development of disordered eating behaviors.

Taken together, the literature suggests that both parental modeling and commenting about weight and bodies affects child eating behaviors and body dissatisfaction. Differential effects have been noted with regard to the gender of the child, as well as the influence of mothers versus fathers, though these patterns are not consistent across all studies.

Family Influences on Body Image: Attachment Theory and Psychoanalytic Perspectives

While social learning theories emphasize the direct impact of parents on their children, attachment theory and other psychoanalytic theories emphasize the very early, preverbal impact that caregivers have on their children with regard to body image. Object relations theory refers to the infant's fantasy of the caregivers' availability or lack of responsiveness as internal objects ("good object" and "bad object"). Bowlby (1979) reframes this concept in the notion of the internal working model, essentially reducing the emphasis on the child's fantasy life, and putting more emphasis on the real and long term effect of the actual sensitivity, responsiveness, and attunement in the caregiving environment. Bowlby (1979) writes: "The concept of a working model of the self comprehends data at present conceived in terms of self-image, self-esteem, etc." (p. 140). These models form the foundation for self-esteem – a growing understanding of how we should expect to be cared for by others, and the subsequent conclusion of what kind of care we deserve. Bowlby (1979) described attachment needs as fundamentally body-based needs. The caregiver-infant relationship initially relies on physiological needs being met and the quality of tactile sensations that the infant experiences. The infant can feel, from very early on, whether her body is cared for sensitively or not. This is often conveyed in very subtle ways, and has to do with maternal responsiveness to the infant's physiological needs and affect states (Krueger, 2002a; Stern, 1985).

Winnicott (1971) describes this important role of the mother in the baby's life as a "mirror role." He explains that the baby looks at the mother and the mother's face reflects how he is feeling. The baby, therefore, sees himself in his mother. Winnicott describes dire consequences if this mirroring process is not present (in other words if the mother is not responsive), and explains that this will profoundly affect the way the child develops his or her self-concept, and how he or she approaches actual mirrors in the future. He writes: "A baby so treated will grow up puzzled about mirrors and what the mirror has to offer. If the mother's face is unresponsive, then a mirror is a thing to be looked at but not to be looked into" (Winnicott, 1971, p. 152).

Daniel Stern (1985) refers to this type of necessary caregiver attunement as *affect attunement*, explaining that the mother is not exactly a mirror, but she communicates affect and understanding of the child's affects in various subtle ways. Stern uses the term *vitality affects* to describe the various interactions that may not qualify as affective responses according to our traditional understandings of affect, but they are felt by the infant as such. Simple actions performed by the caregiver, such as picking up the baby, folding diapers, brushing her own hair – these can be felt by the baby as affective interactions. It is hypothesized that this early affect attunement and maternal mirroring profoundly affects the child's sense of self, and specifically her

sense of her own body, body boundaries, and self-esteem. Krueger (2002a) describes what happens when the mirroring and attunement from the caregiver is inappropriate, drawing from Winnicott's (1971) concept of the "false self." "These individuals describe the sense of never having lived in their own bodies, never having authentically inhabited them. Their bodies never seem to be their own, and do not become integrated as a seamless aspect of the self" (Krueger, 2002a, p. 114).

There have been few studies conducted exploring the relationship between attachment representations and body image in adults; and even fewer evaluating this relationship in children. In Cheng and Mallinckrodt's (2009) study with female college students, the authors evaluated the interactions amongst body satisfaction, romantic adult attachment, memories of parental care, and internalization of the media. They found that memories of warmth and acceptance in parents led to less internalization of media ideals and subsequently lower rates of body image dissatisfaction. Additionally, they found a direct relationship between memories of warm and accepting maternal care and body image satisfaction, whereas this relationship did not exist for memories of father care. In a study of adolescent females, Patton, Beaujean, and Benedict (2014) also found that a strong, positive relationship with one's mother was positively associated with body satisfaction. Additionally, perceived mother and father care were indirectly associated with less media internalization (which was linked to body satisfaction) through a positive relationship with friends. In other words, a secure attachment to parents influences the security felt in friendships during adolescence, and these peer relationships serve as a protective factor against the media influences.

Other studies have looked at the relationship between attachment classifications and eating disorders to further explain this transmission. Ward and colleagues (2001) explored this line of research with Eating Disorder (ED) patients, using the Adult Attachment Interview (AAI) to evaluate the patient's attachment representations of their own childhood experiences. The authors found that 95% of their sample of ED patients were insecurely attached (75% classified as *dismissing* and 20% classified as *preoccupied*). AAIs were also administered to the patients' mothers, and they, too, were mostly classified as insecure. This study illustrates the common pattern of attachment for individuals with severe body image disturbance, in addition to the patterns of their mothers, suggesting an intergenerational transmission of body representations through the mechanism of attachment representations.

Troisi and colleagues (2006) conducted a study with women diagnosed with EDs, measuring level of body dissatisfaction, self-reported childhood separation anxiety, level of depression, and adult attachment styles as determined by the Attachment Style Questionnaire (ASQ). Controlling for BMI and depression in a hierarchical regression model, the results showed a direct effect of insecure adult attachment and separation anxiety on body image dissatisfaction (Troisi et al., 2006). The authors described the insecurely attached individuals as having "high levels of anxiety about rejection and abandonment" and being acutely sensitive to societal ideals due to their "need for approval" (p. 452). These are the factors that likely contribute to body dissatisfaction.

The studies just mentioned have established a link between body image dissatisfaction and quality of attachment with ED patients. They did not examine how attachment patterns can be linked to a wider range of feelings about body image. Several studies conducted by The Center for Attachment Research Body Group use an assessment tool, The Mirror Interview, that assesses a wide range of body image perceptions and attitudes in children and adults. The Mirror Interview was developed as a clinical tool by Dr. Paulina Kernberg (2007) and Dr. Bernadette Buhl-Nielsen (2006). The theoretical foundation of this paradigm developed from Winnicott's (1971) theory of the important mirroring function of the mother. Drawing from this theory, it was hypothesized that children would be reminded of their mothers when looking at their own reflections in the mirror, due to their mothers having been their very first mirrors. As Winnicott writes: "When the average girl studies her face in the mirror she is reassuring herself that the mother-image is there and that the mother can see her and that the mother is in rapport with her" (p. 152). This attachment connection to one's own reflection

is hypothesized to last through adulthood (Kernberg, 2007). Kernberg further developed this theory from observing children seeming to feel comforted by their images in the mirror when mothers stepped out of the room. This seemed to imply that the child found some security and safety in her own reflection, just as she might find in the presence of her parent. One such child is described in the following clinical observation:

> I observed a verbal, affectionate 21-month-old little girl whose mother was well attuned to her and seemed to enjoy interactions with her daughter. When the mother was asked to leave the room, she left her purse next to the little girl and said she would return in a few minutes. I would have expected to see signs of the child missing the mother – burrowing in the mother's lab to prevent her from leaving, going to the door, following, calling, looking, or clinging to a familiar object. In contrast, I found that this particular child did not go to the door in search of her mother but instead when to a nearby freestanding, full-length mirror, clutched it with her two hands, and attempted to go into the mirror as if it were a door. Finally, she hid behind the mirror muttering, "Mommy, Mommy." Then she settled down to play until her mother came back into the room. All the while, the child showed a positive, pleasant expression on her face. (Kernberg, 2007, p. 5)

From further observations of children in front of the mirror, as well as observing them interacting with their parents, Kernberg found that children who exhibited secure attachment and exploratory behaviors with their mothers also exhibited "pleasurable self-recognition" and "active attempts to integrate the experience" when interacting with the mirror (p. 88). Additionally, she found that the child's positive affect in front of the mirror was associated with self-recognition, positively relating to the mirror image, and exploration. This tells us something about the effect of the mother-child interaction on the child's feelings about her self, through her reactions to her own mirror image. Kernberg hypothesized that children whose mothers were securely attached would have more positive engagement in the mirror. While there wasn't an empirical published study that emerged from this work, her observations were consistent with her hypothesis.

For her dissertation, Kristin Tosi (2014) formulated a manual based on Kernberg's (2007) observations as well as other developmental literature regarding toddler mirror responses, contingency, and self-recognition. This manual was used for an empirical study linking toddler mirror behaviors to maternal attachment patterns, as measured by the Adult Attachment Interview (AAI). The findings of the study represented a mid-range model, with children of securely attached mothers showing moderate involvement in the mirror, children of preoccupied mothers showing over-involvement in the mirror (sometimes including aggressive behaviors; often limiting involvement with the mother who was also in the room), and children of dismissing mothers showing limited involvement in the mirror. Children of mothers who were unresolved on the AAI showed even more heightened involvement with the mirror. The toddler mirror behaviors, interpreted as the child's level of comfort with her own mirror reflection and awareness of herself and her body, seemed related to her mother's own attachment patterns.

Tiffany Haick (2012) used The Mirror Interview (MI) to evaluate the links between body representations and attachment representations in adults. The Mirror Interview requires the adult to stand in front of the mirror while answering questions about how she feels about herself and her body. This unique paradigm simultaneously asks the subject to consider her self and her body as a subject and an object. "The subject is…required to coordinate what they see with how they feel at the same time taking into account of how they imagine others see and feel about them" (Buhl-Neilsen, 2006, p. 88). Haick administered The Mirror Interview (MI; Kernberg, 2007) and the Adult Attachment Interview (AAI) to adult women. Findings indicated that securely attached women expressed a more positive view of themselves in the MI and had more coherent and reflective narratives while in front of the mirror than insecurely attached women. These findings suggest that there is a relationship between attachment representations and self-view,

as well as the ability to coherently speak about one's self while confronted with one's mirror reflection. There was also a significant relationship between self-reported eating concerns and the expression of a negative self-view, negative affect, and a negative paternal representation when in front of the mirror. These results are consistent with previous research that has established the connection between eating/weight concerns and self-esteem and depression. These findings also establish the particular influence of perceived criticism and harshness of father on self-esteem, eating concerns, and negative affect.

Much of the research that has been done on the links between body image and attachment explores adult attachment *styles* – that is the individual's attachment style with regard to current relationships – rather than assessing the adult's experience of her own early childhood (using the AAI). By using the AAI, as was done in Haick's (2012) dissertation study, early childhood experiences and representations of self and other within that caregiving environment can be assessed and directly associated to the development of body image dissatisfaction. To our knowledge, there is no previous research exploring the relationship between the adult's attachment representations and the effect this has on her own child's body image. This is an area of research that would help elucidate the mechanisms of body image transmission.

Conclusions

Body image dissatisfaction has been studied extensively, and it's widespread impact on mental health across gender and age spectrums have been well-recognized. It has been noted that though sociocultural influences have a significant impact on the development of body image dissatisfaction throughout childhood and adulthood, the foundation for this attitude toward the body can be traced back to earlier points in development. Body representations and internal working models begin to form in infancy through repeated affective interactions with caregivers. The caregiver's sensitivity to the infant's needs and body profoundly influences how that child's body image might develop later in life.

Attachment theory and other psychoanalytic theories provide a foundation for understanding the importance of the child-caregiver interactions in the formation of a sense of self. Social learning theories demonstrate how parents can have a more direct impact on children's weight-related behaviors and body satisfaction through modeling or verbalizing comments about appearance. Sociocultural theorists have evidenced the complex relationship amongst family, media, and peer influences, indicating that the development of body image dissatisfaction cannot simply be attributed to one of these external factors more than another. These theorists have also elaborated on the mechanisms involved that increase the power of media influences – internalization and identification, social comparison, and perceived pressure. In other words, there are certain people who are more vulnerable to media influences than others. This vulnerability can be explained by attachment theory – that secure relationships with caregivers can be a protective factor in a society filled with superficial messages about not being beautiful enough. From the reviewed literature on body image development and satisfaction, it is clear that the different models and theories interact in complex ways, helping us to create a more coherent picture of multiple influential factors throughout the lifespan. While some research has been conducted on the relationship between eating disorders and attachment representations, as well as the relationship between parental care and body image, more research needs to be done to understand the complete role of attachment in the intergenerational transmission of body image across the lifespan, and how attachment theory interacts with and explains other theoretical models of the development of body image.

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Utilization of The Mirror Interview to Explore the Influences of Parents and Objectification on the Body and Disordered Eating Behaviors

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In the present study, The Mirror Interview is utilized to explore the impact of self-objectification, culture, and parent representations on body image dissatisfaction and disordered eating. The Mirror Interview, Objectified Body Consciousness Scale, and Eating Attitudes Test-26 were administered to undergraduate women (N = 100). Participants were randomly assigned to be asked questions regarding their feelings about their bodies and the influence of their parents while sitting face-to-face with the interviewer (without-mirror-group) or while looking at their own reflections in a full-length mirror (with-mirror-group). Significant differences were found on Mirror Interview codes between with- and without-mirror-groups across a range of categories. Parent representations as measured by The Mirror Interview in the with-mirror-group significantly contributed to the amount of disordered eating variance explained by a hierarchic regression model, even after accounting for age, BMI, and body shame. Parent representations did not significantly contribute to the disordered eating variance explained by the model in the without-mirror-group. The findings demonstrate the significant impact of parent representations on disordered eating behaviors, and indicate that looking at one's reflection during The Mirror Interview is an integral part of the task.

Keywords: attachment theory, objectification theory, disordered eating, The Mirror Interview

Body image dissatisfaction (BID) and disordered eating are widespread problems that can have lasting consequences for a significant portion of the population (Fredrickson & Roberts, 1997; Hoek & van Hoeken, 2003; Hudson, Hiripi, Pope, & Kessler, 2012). BID refers to negative affective and cognitive evaluations of one's body (Cheng & Mallinckrodt, 2009) and is associated with exposure to prominent beauty ideals within western culture (Levine & Muren, 2009; Thompson & Stice, 2001; Tiggemann & Polivy, 2010). BID is often paired with disordered eating behaviors that aim to modify aspects of appearance that are deemed unacceptable (Levine & Smolak, 2004). Disordered eating refers to a range of problematic eating behaviors, such as restrictive or binge eating, that are not attuned with hunger (National Eating Disorders Association, n.d.). Disordered eating behaviors do not necessarily meet criteria as an eating disorder by traditional diagnostic standards, despite having emotional and physical consequences (Neumark-Sztainer, 2005; Shisslak, Crago, & Estes, 1995). The development of body image disturbance and disordered eating behaviors is a complex process with multiple pathways. The purpose of the present study is to utilize a unique measure, The Mirror Interview (Kernberg, 2007), in order to better understand the impact of parent representations and self-objectification on feelings about the body and eating behaviors.

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Objectification Theory

The rise in body image disturbances and disordered eating over the past several decades is well-documented (Hoek & van Hoeken, 2003;

Hudson et al., 2012) and has largely been attributed to beauty ideals promoted within western culture (Wolf, 1991; Fredrickson & Roberts, 1997; Bessenoff, 2006). Objectification Theory posits that, due to the internalization of cultural beauty standards promoted by the media, women are socialized to self-objectify by imagining themselves from the perspectives of others (Fredrickson & Roberts, 1997). If an individual has internalized cultural beauty standards, and notes a discrepancy between her perceived appearance and the cultural standard of beauty, then she is prone to experience body shame (McKinley & Hyde, 1996). Noll and Fredrickson (1998) argue that women who have high levels of self-objectification not only dislike the appearance of their bodies, but consider it a moral failing when they are not able to shape their body to fit beauty ideals through dieting, exercise, or other beauty rituals.

Self-objectification can occur either at the state or trait level (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998). Trait self-objectification refers to the relatively stable degree to which an individual has internalized the other's perspective of her body and the resulting preoccupation with her appearance. Although all women in western culture are hypothesized to have some degree of trait self-objectification, the intensity will vary from woman to woman depending on the degree to which she has internalized cultural beauty standards. State self-objectification refers to a degree of self-objectification that varies depending on the current environmental context. By manipulating state self-objectification, researchers have been able to develop an understanding of how self-objectification impacts the functioning of women.

Various studies have evaluated the impacts that state self-objectification has on body shame, restrictive eating, and cognitive functioning. In a study by Fredrickson and colleagues (1998), which was later replicated (Hebl, King, & Lin, 2004), state self-objectification was manipulated by having an experimental group of women look at their reflections in a mirror while wearing a bathing suit, as compared to a control group who looked at their reflections while wearing a sweater. Women whose self-objectification was increased by viewing themselves in bathing suits had higher levels of body shame and restrictive eating as compared to women wearing sweaters, and performed less well on basic math tasks. Later studies found that higher state self-objectification decreased performance on the Stroop Task (Quinn, Kallen, Twenge, & Fredrickson, 2006) and decreased awareness of internal physical and emotional states (Myers & Crowther, 2008).

One explanation for the finding that self-objectification impacts a variety of cognitive abilities is that self-objectification takes up cognitive resources for imagining what one looks like to others, evaluating the degree to which one is attaining cultural beauty standards, and experiencing shame (Fredrickson et al., 1998). This leaves fewer attentional resources to allocate to other tasks. In this way, self-objectification not only contributes to body shame and disturbance, but also negatively impacts multiple facets of daily functioning.

Although Objectification Theory provides a clear and empirically supported argument for how messages about beauty and bodies in the media impact women, it is only one piece of a complicated puzzle. Based on the fact that not all women who are exposed to the same media develop BID and eating concerns to the same degree, Greenwood and Pietromonaco (2004) suggest that there must be an interaction between culture and the psychology of each individual that accounts for a range of outcomes. They argue that relational representations, especially those developed via parent-child relationships, must be taken into account in order to explain the variance of these problems across women within the same culture.

Role of Parents

Distinct but related lines of theory and research emphasize the impact of parent-child relationships in the development of body and eating disturbances (Bloom & Kogel, 1994; Cheng & Mallinckrodt, 2009; Greenwood & Pietromonaco, 2004; Orbach, 2009). Attachment Theory (Bowlby, 1969) is an invaluable framework for understanding the influence of caregivers on their children's experience of their bodies. According to Bowlby's (1969) Attachment Theory, children with caregivers who are available, responsive, and sensitive to their needs will develop secure attachments that will set the stage for interpersonal competence and psychological

resiliency (see also Steele, 2011). Alternatively, children with caregivers who are not readily available or sensitive to their needs are likely to develop insecure (anxious or avoidant) attachments.

The quality of attachment with caregivers greatly influences the development of a child's internal working model, or how she views herself and her expectations about how the world and others should treat her (Main, Kaplan, & Cassidy, 1985). The impact of internal working models developed in the early caregiving context have long-lasting effects on psychological functioning, with the caveat that these models may be modified in future relationships with sensitive partners or therapists (Steele & Steele, 2008). If women's internal working models impact their global feelings about themselves, then it stands to reason that this would generalize to their body-esteem and associated behaviors as well.

As pointed out by Bloom and Kogel (1994), the body, food, and eating additionally have important symbolic meanings that trace back to early caregiving relationships. Physical hunger cues are one of infants' first introductions to desire, and the provision or absence of food are introductions to satisfaction and deprivation, respectively. If food is presented predictably by caregivers in response to hunger, a child develops a healthy sense of entitlement, which the authors describe as "the building blocks of a secure sense of self" (Bloom & Kogel, 1994, p. 42). With the foundation of a secure sense of self, the child is able to identify and feel entitled to the satiation of her own needs. If a child's hunger is not responded to with food, she will not develop a view of herself wherein her needs are worthy of being met. If too much food is provided, for example when a child is fed to soothe needs other than hunger, then the child will have difficulty differentiating between her own needs as she develops into an adult.

Empirical research supports the link between attachment relationships and the body. Fonagy and colleagues (1996) found a relationship between idealization of parents as measured by the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) and eating disorder diagnosis (Fonagy et al., 1996). In Ringer and Crittenden's (2007) sample of 62 women with eating disorders, all were classified as being anxiously attached. Kenny and Hart (1992) used the Parental Attachment Questionnaire (Kenny, 1990) to assess current relationships between college age women and their parents, and reported that more securely attached women had lower weight concerns, lower dieting preoccupation, and less bulimic behavior. Troisi and colleagues (2006) found that body-esteem was negatively correlated with separation anxiety early in life.

Especially notable is a study by Cheng and Mallinckrodt (2009), which was designed to assess the interaction between attachment, culture, and body image. Cheng and Mallinckrodt found a negative relationship between memories of mother and father care as warm and expressive early in life with adult anxiety in romantic relationships, media internalization, and body dissatisfaction in undergraduate women. The authors argue that this relationship can be explained by the fact that women who develop negative self-views during childhood due to insensitive caregivers will have a greater need for external validation. They are therefore more vulnerable to internalizing cultural beauty ideals, because attaining these ideals offers the hope of external affirmations.

Parents additionally influence their children via direct messages about the body and modeled behaviors. The perception of adolescents of interpersonal pressures to be thin, including perceived pressures from their mothers, is strongly associated with disordered eating behaviors (Shomaker & Furman, 2009). In conjunction with the explicit messages communicated by parents about their child's body, they also implicitly model behaviors. According to Albert Bandura's (1969) Social Learning Theory, children learn by observing the behaviors that are being modeled by others. Therefore, a child who observes her mother dieting and being critical of her own body is prone to mimic these behaviors herself. This theory is supported by Pike and Rodin's (1991) finding that mothers who had high levels of disordered eating were more likely to have daughters with high levels of disordered eating.

The Mirror Interview

The literature outlined thus far demonstrates the complexity of the psychological development regarding the body, body image dissatisfaction,

and disordered eating. Although there is research evaluating the impact that parent-child relationships and self-objectification have on body image independent of one another, little has been done to look at the possible interactions between these components. The Mirror Interview (MI) was originally developed by Dr. Paulina Kernberg and Dr. Bernadette Buhl-Nielsen for use with adolescents (Kernberg, 2007; Buhl-Nielsen, 2006). The MI is a tool that can be used to explore the intersection of self-objectification, culture, and parent-child relationships. It is a task with a structure designed to elicit the multitude of experiences that contribute to the development of body image, and is simultaneously flexible enough to allow participants to verbalize what has been most subjectively salient for them in how they think and feel about their bodies.

A project to use the MI in order to better understand the influence of parents and culture on the body and disordered eating was initiated through a collaboration between Dr. Buhl-Nielsen (leader of the Copenhagen Body Group), a research team from The New School's Center for Attachment Research (The New School Body Group), and a team of clinicians who specialize in the treatment of psychological disorders related to the body and eating (The BODI Group[1]). The questions in the MI probe for feelings about the body ("Can you tell me something you like/dislike about your body?"), feelings about the self ("Do you think people like you?"), beliefs about the influence of caregivers ("Is the way you think or feel about your body influenced by your mother/father?"), and awareness of the influence that culture has on self-view ("Imagine living in a culture where all body shapes and sizes were appreciated and thought attractive and beautiful. How would your life be different?"). The questions require an individual to create a narrative about how they feel about themselves and their bodies, as well as reflect on the reasons that they feel this way.

The MI was designed to be administered while the interviewee looks at her reflection in a full-length mirror. This is based on the assumption that looking at oneself in the mirror while responding to these questions plays a critical role in the task. Kernberg (2007) initially included the mirror in the interview due to the developmental implications of looking at one's own reflection, especially as it pertains to early parent-child relationships. Per Winnicott (1967, 1972), the mother's face acts as a metaphorical mirror to an infant, and therefore Kernberg argues that the mirror can subsequently bring up feelings of being seen by the mother later in life.

While Kernberg (2007) evaluates the impact of the mirror from an attachment perspective, it has implications for Objectification Theory as well. As discussed previously, Objectification Theory posits that too great a focus on imagining the self from the other's point of view can create problems. Looking at one's own reflection while responding to the questions of the MI provides the viewer with an image of what others see when looking at her, thereby forcing her to take on the role of the observer. This should therefore increase the individual's state self-objectification, just as it would be heightened in other objectifying contexts. Interviewing women about themselves and their bodies while they are in a heightened state of self-objectification will potentially elicit feelings that women have about themselves when they are in objectifying situations that occur in daily life.

Although there is a rich foundation of theoretical support for the use of the MI to assess body image disturbances, there remains a limited amount of empirical studies that use this tool. Given the importance attributed to the mirror and recognition of one's own reflection, a study of whether the mirror is actually having a differential impact on responses of the MI is required. Administration of the MI to a large sample of participants additionally provides the opportunity to hear from women in their own words about how they feel about themselves, their bodies, and the perception of the impact of culture and their parents. Letting women reflect on and speak about their experiences in their own voices is a first step toward validating the complexity and agency of the women who cultural beauty standards otherwise threaten to reduce to passive objects.

If one of the impacts of looking at one's reflection in the mirror is to experience higher state-level self-

[1]Members of the BODI Group who consulted on the use of the MI at The New School included Catherine Baker-Pitts, Carol Bloom, Luise Eichenbaum, Linda Garofallou, Susie Orbach, Jean Petrucelli, and Suzi Tortora. For further reading on the BODI Group's work, please see Baker-Pitts et al., 2015.

objectification, we then hypothesize that women looking in the mirror would be more likely to have negative evaluations of themselves, experience higher levels of distress and subsequent negative affect, and be more focused on their physical attributes as opposed to integrating psychological aspects of themselves into their responses. It was therefore hypothesized that, consistent with Objectification Theory, women interviewed in front of the mirror would score lower on items in the Self-View, Affect, and Relatedness categories of codes.

Based on the assumption that parents have a significant impact on the eating attitudes of their children, it is hypothesized that measures of Parent Representation (Mother and Father) as evaluated by the MI will be associated with disordered eating as measured by the Eating Attitudes Test-26 (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982). This association is expected to remain significant even after statistical analyses are used to control for the impact of body shame on disordered eating. Parent representations are expected to more strongly predict disordered eating when the MI is administered while participants look at their reflections, as compared to when participants sit face-to-face with the interviewer. This hypothesis is based on the assumption that, as suggested by Kernberg (2007), looking at one's reflection in the mirror elicits the experience of having been looked at by caregivers in the past. Responses about the influences of parents on the MI should therefore be affectively charged with the early experience of being seen by the parent when the interview is done in the front of the mirror.

Method

Participants

A total of 100 participants completed the questionnaires and the Mirror Interview (MI). One participant was dropped from further analyses because her age was significantly older than the rest of the participants (36-years-old). Age of participants were non-parametric (skewness = 1.03, *SE* = 0.24; kurtosis = 1.45, *SE* = 0.48), which reflects that 91 of the participants were between the ages of 18 and 22, and only 8 were between 23 and 26. Participants were an average of 20-years-old (*SD* = 1.57), with a range of 18 to 26. A Mann-Whitney test indicated no significant differences between conditions based on age ($U = 965.5$, $p = .07$). Of the sample, 49 were non-Hispanic Caucasian (49.5%), 30 were Asian/Pacific Islanders (30.3%), 12 were Latina/Hispanic (12%), 2 were African American (2%), 1 was Native American (1%), and 5 were biracial (5.1%). The sample was predominately heterosexual and from middle to upper-middle class backgrounds. Details of demographic information can be referenced in Table 1.

Table 1
Demographic characteristics of sample after age outlier removed (N = 99)

	N (%)	Mean (SD)
Age (years)		20 (1.57)
Race/Ethnicity		
Non-Hispanic Caucasian	49 (49.5%)	
Asian/Pacific Islanders	30 (30.3%)	
Latina/Hispanic	12 (12%)	
African American/Black	2 (2%)	
Native American	1 (1%)	
Biracial	5 (5.1%)	
Sexual Orientation		
Heterosexual	86 (86.9%)	
Lesbian	2 (2%)	
Bisexual	6 (6%)	
Decline to State	5 (5.1%)	
Socioeconomic Status		
Upper Class	9 (9%)	
Upper-Middle Class	43 (43.4%)	
Middle Class	26 (26.3%)	
Lower-Middle Class	12 (12.1%)	
Working Class	5 (5.1%)	
Decline to State	5 (5.1%)	

Self-report questionnaires were completed by all participants. One Mirror Interview was left out of analyses due to technical problems with the video recorder during the interview. Of the participants, 53 were interviewed while looking at their reflection in the mirror (with-mirror-group), and 46 were interviewed sitting face-to-face with the interviewer (without-mirror-group).

Procedure

Undergraduate women were recruited through flyers and an online subject pool for students taking psychology courses. Participants were offered study credit for a psychology course, to be entered into a raffle to win an iPod, or to pick an item from a grab bag. Students who expressed an interest in participating were told, "In this study we are investigating the relationship between body image, culture, and family in undergraduate women. Participants will be asked to complete a short interview and several questionnaires."

When participants arrived at the lab, the experimenter reviewed a consent form with them, which included a brief explanation of the purpose of the research, possible risks and benefits, and confidentiality. Consent was received from participants to videotape the interview. The first half of recruited participants filled out a demographic questionnaire in the lab following the consent procedure. The latter half digitally signed a consent form pertaining only to online questionnaires, and answered demographic information via Survey Monkey prior to coming to the lab in order to minimize the amount of paperwork filled-out by hand.[2] These participants went through the same consent procedures as the other participants when they first arrived to the lab.

After participants had provided consent and filled out demographic questionnaires, they were randomly assigned to stand in front of the mirror and look at themselves during the Mirror Interview (with-mirror-group) or asked to answer the same questions while sitting face-to-face with the interviewer (without-mirror-group). Following the interview, participants were asked to fill out the EAT-26 (Garner et al., 1982) and the Objectified Body Consciousness Scale (McKinley & Hyde, 1996).

Once participants completed the questionnaires, they were given a debriefing, which provided further information regarding the Mirror Interview and the rationale behind the study design. Participants were provided a one-page write-up about the study, and had the opportunity to ask the experimenter questions. Included in the hardcopy of the information sheet provided to participants was the email address of the principle investigator, the number for the school counseling center, contact information for a crisis hotline, and psychotherapy referral sources.

[2]A series of additional measures were administered on Survey Monkey as well as in the lab following the interview. These measures were parts of associated projects, and will be reported in separate papers.

Measures

The Objectified Body Consciousness Scale (OBCS). The OBCS (McKinley & Hyde, 1996) is a questionnaire consisting of 24 items. Participants respond on a 7-point scale ranging from "strongly agree" to "strongly disagree," with the middle option of "neither agree nor disagree." Participants may also circle "not applicable" for any item. The OBCS contains three subscales that measure body shame ("When I can't control my weight, I feel like something must be wrong with me."), control beliefs ("I think a person can look pretty much how they want to if they are willing to work at it."), and body surveillance ("During the day, I think about how I look many times."). The OBCS was designed primarily to measure trait-level self-objectification, and when validated on undergraduate women the subscales demonstrated internal reliability (Surveillance α = .89, Body Shame α = .75, Control Beliefs α = .72).

Eating Attitudes Test-26 (EAT-26). The EAT-26 (Garner et al., 1982) is a 26-item measure that was originally developed to screen individuals for eating disorders. Research indicates that the EAT-26 is most effective for examining mild to moderate disordered eating rather than severe eating disorder symptomatology (Scheinberg et al., 1993). This makes the EAT-26 appropriate for the current study, as the focus is on a range of disordered eating behaviors and attitudes within a non-clinical sample. Each question on the EAT-26 has six possible responses, ranging from Never to Always, with each answer scored as 0, 1, 2, or 3. A total score of 78 is possible, with scores of 20 and above considered to be high (Scheinberg et al., 1993). In the validation study (Garner et al., 1982), the scale had high internal reliability for women diagnosed with anorexia nervosa (α = .90) and a control group of undergraduate women (α = .83). The EAT-26 has been shown to be positively associated with the OBCS subscales, and negatively associated with body-esteem (McKinley & Hyde, 1996).

The Mirror Interview (MI). The Mirror Interview (MI) is a structured interview originally developed by Kernberg (2007) and Buhl-Nielsen (2006) to be used with adolescents. Individuals are asked questions about how they feel about themselves, their bodies, and their perception of influences from their parents and culture. The interview was designed to be done while the participant is looking at her reflection in a full-length mirror; however, in this study the interview was additionally done with participants sitting face-to-face with the interviewer. Video-recordings of the interview are rated by a team of reliable coders, using a system developed by Buhl-Nielsen (2008; also see Haick, 2010 for additional reading on the utilization of this coding system). The rating system consists of 20 codes, which are grouped into four categories for the purpose of this study – Parent Representation, Self-View, Quality of Narrative, and Affect and Relatedness.

Results

Self-Report

BMI. Self-report of height and weight was provided by 91 participants, and 8 participants declined to provide this information. BMI was non-parametric (*Mdn* = 21.30, skewness = 1.72; *SE* = 0.25; kurtosis = 4.34, *SE* = .05). A Mann-Whitney test was therefore performed, and indicated that there was no significant difference for BMI between the with-mirror (*Mdn* = 21.48) and without-mirror (*Mdn* = 21.21) groups ($U = 956.00$, $p = .56$, $r = -0.06$).

Objectified Body Consciousness Scale. Internal reliability for all three OBCS subscales were within an acceptable range (Body Surveillance $\alpha = .80$, Body Shame $\alpha = .82$, Control $\alpha = .77$). The Control subscale of the OBCS was normally distributed (*M* = 4.66, skewness = 0.55, *SE* = 0.24; kurtosis = 0.23, *SE* = 0.48), and the Body Surveillance (*M* = 4.55, skewness = -0.51, *SE* = 0.24; kurtosis = 0.04, *SE* = 0.48) and Body Shame (*M* = 3.11, skewness = 0.55, *SE* = 0.24; kurtosis = 0.23, *SE* = 0.48) subscales had mild to moderate skews. As these measures did not meet the cutoff for being considered significantly skewed, they were considered appropriate to be used without transforming the data in parametric analyses.

The Eating Attitudes Test-26. The EAT-26 had adequate internal reliability ($\alpha = .81$), and was significantly skewed and kurtotic (*Mdn* = 6.00, skewness = 1.65, *SE* = 0.24, kurtosis = 2.5, *SE* = 0.48) to a degree that made it inappropriate to use in analyses that have an assumption of parametric distributions. A Mann-Whitney test indicated no significant difference between the with-mirror (*Mdn* = 4.00) and without-mirror (*Mdn* = 6.50) groups on original EAT-26 summary scores ($U = 969.00$, $p = .08$, $r = -.18$). In order to normalize data, scores were split into four equal groups and three outliers that fell above a score of 30 on the EAT-26 were removed. These normalized scores were used for all future analyses.

Mirror Interview Group Differences

Mirror Interviews were coded by a team of trained graduate students. Interrater reliability was calculated using the average measures Intraclass Correlation Coefficient (ICC). ICCs of all MI codes were within acceptable limits, and ranged between .72 and .96. All MI codes were within acceptable limits for skewness and kurtosis with the exceptions of Paternal Representation (skewness = -0.15, *SE* = 0.24; kurtosis = 2.11, *SE* = 0.48) and Smooth Transition Between Affective States (skewness = -0.70, *SE* = 0.24; kurtosis = 1.55, *SE* = 0.48), both of which had significant kurtosis. As the scores assigned by coders for Smooth Transition Between Affective States were of a limited range, this item was dropped from further analyses. Paternal Representation was recoded into low (original scores 1 and 2), middle (original scores 3), and high (original scores 4 and 5) scores. The recoded Paternal Representation scores were acceptable for use in parametric tests, and were used for future analyses.

Using independent sample *t*-tests, comparisons were made between codes of the MI depending on whether the participants were interviewed with the mirror (with-mirror-group) or sitting face-to-face with the interviewer (without-mirror-group). Codes were organized based on content into four groups: Affect and Relatedness, Self-View, Parent Representations, and Quality of Narrative. Results of *t*-tests for all four groups are summarized in Tables 2-5.

The Parent Representation group consisted of Maternal Representation and Paternal

Table 2
Parent Representation Group Differences

	Mean (SD)					Confidence Interval		
	With Mirror	Without Mirror	*t*	df	*p*	Lower	Upper	*d*
Maternal Representation	3.08 (.81)	2.89 (.89)	1.09	96	.28	-.15	.52	.22
Paternal Representation	3.06 (.57)	3.15 (.85)	-.66	74.60	.51	-.40	-.20	.15
Parent Representation Mean	2.09 (.71)	2.00 (.74)	.64	96	.52	-.20	.39	.13

Table 3
Affect and Relatedness Group Differences

	Mean (SD)					Confidence Interval		
	With Mirror	Without Mirror	*t*	df	*p*	Lower	Upper	*d*
Relatedness to the Interviewer	3.28 (.74)	4.00 (.93)	-4.24	96	.000	-1.05	-3.81	.86
Hedonic Tone	2.60 (86)	3.47 (.87)	-4.92	96	.000	-1.21	-.51	1.00
Spectrum of Affects	2.42 (.69)	2.67 (.64)	-1.86	96	.07	-.52	.17	.38
Congruency of Affective Tone to Content	3.34 (.78)	3.60 (.86)	-1.57	96	.12	-.59	.07	.32
Positive Affective Tone Expressed to Interviewer	3.09 (.71)	3.73 (.78)	-4.23	96	.000	-.94	-.34	.86
Absence of Anxiety	3.11 (.97)	3.73 (.89)	-3.27	96	.002	-1.00	-.24	.67
Absence of Depression	3.04 (1.09)	3.82 (1.03)	-3.64	96	.000	-1.21	-.36	.74
Intensity and Quality of Impression	2.91 (1.08)	3.62 (.98)	-3.41	96	.001	-1.13	-.30	.70

Table 4
Self-View Group Differences

	Mean (SD)					Confidence Interval		
	With Mirror	Without Mirror	*t*	df	*p*	Lower	Upper	*d*
Integrated and Positive Self-Representation	2.92 (.94)	3.58 (.92)	-3.47	96	.001	-1.03	-.28	.71
Positive Body-Esteem	3.06 (.89)	3.29 (.92)	-1.27	96	.21	-.60	.13	.26
Positive Global Self-Esteem	3.43 (.75)	3.84 (.77)	-2.68	96	.009	-.71	-.11	.55
Self-Critical	2.98 (.97)	2.93 (.91)	.25	96	.80	-.33	.43	.05
Integrity	3.24 (.80)	3.71 (.76)	-2.93	96	.004	-.78	-.15	.60
Integrated Relationship to Mirror Image	3.49 (.64)	3.58 (.72)	-.63	96	.53	-.36	.19	.13

Table 5
Quality of Narrative Group Differences

	Mean (SD)					Confidence Interval		
	With Mirror	Without Mirror	*t*	df	*p*	Lower	Upper	*d*
Coherence	2.94 (.79)	3.56 (1.01)	-3.29	82.87	.001	-.98	.24	.72
Reflective Functioning	2.83 (.97)	3.42 (1.12)	-2.80	96	.006	-1.01	-.24	.57
Acknowledgement of Cultural Pressures	3.22 (1.09)	3.31 (1.09)	-.39	96	.70	-.52	.35	.08

Representation, as well as a Parent Representation Mean code. No significant differences were found for any of the Parent Representation codes. The Affect and Relatedness group consisted of the following variables: Relatedness to the Interviewer as an Individual, Overall Hedonic Tone, Spectrum of Affects, Congruency of Affective Tone to Content, Positive Affective Tone Expressed to the Interviewer, Absence of Anxiety, Absence of Depression, and Intensity and Quality of Impression. As predicted, the with-mirror-group had significantly lower mean scores as compared to the without-mirror-group for Relatedness to the Interviewer as an Individual, Hedonic Tone, Positive Affective Tone Expressed to the Interviewer, Absence of Anxiety, Absence of Depression, and Intensity and Quality of Impression. Spectrum of Affects was approaching significance with a trend toward lower scores in the with-mirror-group. Congruency of Affective Tone to Content was the only code in the Affect and Relatedness group that was not significant or approaching significance.

The Self-View group consisted of the following variables: Integrated and Positive Self-Representation, Positive Sense of Body-Esteem, Positive Global Self-Esteem, Self-Criticalness, Integrity/Self-Integration, and Integrated Relationship to the Mirror Image. The hypothesis was supported for three out of the six codes in the group. Scores were significantly lower in the with-mirror-group for Integrated and Positive Self-Representation, Positive Global Self-Esteem, and Integrity/Self-Integration. Differences were not significant for Positive Sense of Body Esteem, Self-Criticalness, or Integrated Relationship to Mirror Image.

The Quality of Narrative group consisted of the following variables: Acknowledgment of Cultural Roles and Pressures, Coherence, and Reflective Functioning. Both Coherence and Reflective Functioning were significantly lower in the with-mirror-group. No significant difference was found between groups on the Acknowledgment of Cultural Roles and Pressures code.

Hierarchic Regression Modeling Influences on Eating Attitudes

In order to test the hypothesis that disordered eating is a function of both body shame and parental representations, a hierarchical multiple regression was performed. Age and BMI were entered first, in order to control for effects related to these factors. Body shame as measured by the OBCS Body Shame Subscale was entered into the model second, followed by the mean score of mother and father representation as measured by responses during the MI. The same regression model was run three times. The first regression included the entire sample, the second included participants who were interviewed without the mirror, and the third included participants who were interviewed in front of the mirror.

Regression 1: Full Sample. Tests for multicollinearity indicated that a very low level of multicollinearity was present (*VIF* = 1.04 for BMI, 1.02 for age, 1.12 for body shame, and 1.16 for parent representation). Results of the regression analysis demonstrated that, as predicted, BMI and age did not significantly help predict disordered eating, R^2 =.06, $F(2, 84) = 2.60$, $p = .08$. Adding body shame into the model had a significant effect, $R^2 = .35$, $\Delta R^2 = .29$, *F Change*$(1,83) = 36.43$, $p < .001$, accounting for 35% of the variance in disordered eating. Adding parental representation further enhanced the predictive power of the model, $R^2 = .42$, $\Delta R^2 = .08$, *F Change*$(1,82) = 11.16$, $p = .001$, explaining 42% of the overall

Table 6
Summary of hierarchic regression results modeling influences on Eating Attitudes with Full Sample

Variable	B	*SEB*	β	*p*
Step 1				
BMI	-.003	.03	-.01	.92
Age	-.17	.08	-.24	.03
Step 2				
BMI	-.02	.02	-.08	.41
Age	-.12	.06	-.17	.06
Body Shame	.54	.09	.54	.000
Step 3				
BMI	-.03	.02	-.11	.22
Age	-.12	.06	-.17	.06
Body Shame	.48	.09	.48	.000
Parent Representation	-.43	.13	-.29	.001

Note. R^2 = .06 for Step 1; ΔR^2 =.29 for Step 2; ΔR^2 = .08 for Step 3.

Table 7
Summary of hierarchic regression results modeling influences on Eating Attitudes in Without-Mirror-Group

Variable	B	*SEB*	β	*p*
Step 1				
BMI	-.02	.04	-.08	.62
Age	-.20	.10	-.32	.05
Step 2				
BMI	-.04	.04	-.17	.27
Age	-.14	.10	-.22	.15
Body Shame	.36	.14	.39	.02
Step 3				
BMI	-.04	.04	-.18	.24
Age	-.13	.10	-.20	.19
Body Shame	.34	.14	.37	.02
Parent Representation	-.27	.19	-.21	.17

Note. R^2 = .11 for Step 1; ΔR^2 =.14 for Step 2; ΔR^2 = .04 for Step 3.

variance in disordered eating (see Table 6).

Regression 2: Without-Mirror. Tests for multicollinearity indicated that a very low level was present, (*VIF* = 1.08 for BMI, 1.09 for age, 1.13 for body shame, and 1.03 for parent representation). Consistent with the findings from the regression which included the full sample, BMI and age did not significantly predict disordered eating, R^2 = .11, $F(2, 36) = 2.27$, p = .12, and adding body shame greatly increased the predictive ability of the model, R^2 = .25, ΔR^2 =.14, *F Change*(1,35) = 6.33, p = .02, with 25% of the variance in disordered eating being explained. Contrary to the hypothesis and the findings of the regression when performed with the full sample, adding parental representation did not significantly improve the fit of the model, R^2 = .29, ΔR^2 =.04, *F Change*(1,34) = 2.00, p = .17 (see Table 7).

Regression 3: With-Mirror. Tests for multicollinearity indicated that a very low level was present, (*VIF* = 1.04 for BMI, 1.02 for age, 1.12 for body shame, and 1.16 for parent representation). As with the previous analyses, age and BMI were not significantly associated with disordered eating, R^2 = .03, $F(2, 45) = 0.61$, p = .55. When body shame was added to the model, a large amount of the variance was accounted for, R^2 = .47, ΔR^2 = .44, *F Change*(1, 44) = 36.5, $p < .001$. Unlike when the regression was performed with participants in the without-mirror-group, adding parent representations to the model had a significant effect, R^2 = .55, ΔR^2 = .08, *F Change*(1,43) = 7.32, p = .01. Including parent representations in the model increased the disordered eating variance explained from 47% to 55%. This demonstrated that the model with the best fit incorporated both body shame and parent representations (see Table 8).

Discussion

Consistent with our first hypothesis, there were significant differences between the with-mirror and without-mirror interviews across a range of codes in the Affect group. Women interviewed in front of the mirror were observably in more distress, as evidenced by higher levels of anxious and depressed affect, and had more difficulty containing their distress throughout the interview. They were additionally

Table 8
Summary of hierarchic regression results modeling influences on Eating Attitudes in With-Mirror-Group

Variable	B	*SEB*	β	*p*
Step 1				
BMI	.01	.04	.03	.83
Age	-.13	.12	-.16	.28
Step 2				
BMI	.001	.03	.03	.96
Age	-.09	.09	-.12	.29
Body Shame	.69	.11	.67	.000
Step 3				
BMI	-.01	.03	-.05	.65
Age	-.11	.08	-.14	.19
Body Shame	.59	.11	.57	.000
Parent Representation	-.49	.18	-.30	.010

Note. R^2 = .03 for Step 1; ΔR^2 =.44 for Step 2; ΔR^2 = .08 for Step 3.

more distant and less warm toward the interviewer. These findings suggest that viewing one's body is a distressing task for many women, even within a non-clinical sample.

The hypothesis that women would be more critical of themselves as measured by the Self-View codes when interviewed in front of the mirror was partially supported. As expected, women viewing their image in the mirror expressed more negative global self-esteem, expressed less hope for becoming the person who they wish to be, and were less likely to incorporate psychological aspects of themselves into their narratives. The tendency of women to incorporate fewer psychological aspects of themselves when they were viewing themselves in the mirror supports the theory that being forced to take on the perspective of the other of one's own body causes individuals to reduce themselves to a passive, physical object. The self becomes merely a body to be viewed, as opposed to being a part of a complicated combination of the physical, the psychological, and the interpersonal. With psychological features de-emphasized, it is unsurprising that expressions of global-esteem and hope about the future were lower as well.

Interestingly, the MI codes that assessed Positive Sense of Body Esteem, Self-Criticalness, and Integrated Relationship with Mirror Image did not show statistically significant differences between the with- and without-mirror-groups. Especially of note was the finding that women were not more critical of their bodies when viewing themselves in the mirror. One possibility for this unexpected finding is that women are well-versed with their dissatisfactions with their bodies, whether they are looking at themselves or at another individual. Body dissatisfaction and self-criticalness are familiar topics for many women, and require no extra prompting via mirror to be expressed. From this perspective, heightened state self-objectification as induced in the MI does not necessarily heighten body dissatisfaction, which is already well ingrained in the individual. Rather, it strips the individual of the appreciation of their psychological components, and reduces their self-view to the experience of evaluating the acceptability of a physical object with no acknowledged internal world.

Although it was not hypothesized that there would be significant differences between the with- and without-mirror-groups on the Quality of Narrative codes, the codes of Coherence and Reflective Functioning were both lower in the with-mirror-group. Despite this difference not being initially anticipated, it is consistent with previous findings that inducing a heightened state of self-objectification decreases performance on cognitive tasks across a range of domains (Fredrickson et al., 1998; Hebl et al., 2004; Myers & Crowther, 2008). If women's available cognitive resources are reduced while looking at themselves in the mirror, this leaves fewer resources to allocate to creating a thoughtful, coherent, and reflective narrative about one's own experience. The implications of these results are significant, as they imply that heightened self-objectification can impede on a woman's ability to be reflective and clearly express herself to others.

The comparison of MI codes between the with- and without-mirror-groups demonstrated that the mirror has a significant impact on the quality of the responses given by participants. Whether this difference was helpful or detrimental to the task

remained unclear. The hierarchic regression models demonstrated the utility of the MI for understanding disordered eating behavior. Significant differences in predictive abilities of the interview were found between the with-mirror-group and without-mirror-group. By entering body shame as measured by the OBCS into the model, it was possible to evaluate whether parent representations as measured by the MI had a significant impact on disordered eating beyond their contribution to feelings of shame about one's body.

The regression done with the full sample demonstrated that even after body shame is accounted for, representations of the impact of parents as measured by the MI increased the variance of disordered eating explained from 35% to 42%. The finding that parent representations have a significant impact even once body shame is accounted for is consistent with the perspective that the influence of parents on the body and eating behaviors has multiple pathways. If the transmission of eating disturbance from parent to child were solely accounted for by the endorsement of western beauty ideals and subsequent shame of one's body, then the association between parent-representations and disordered eating would disappear after body shame was introduced into the model. Contrary to this, representations of parents are contributing something to disordered eating levels beyond culturally sanctioned perspectives of beauty.

Notably, when only the participants who were interviewed without looking at their reflections were entered into the same regression, the impact of parental representations as measured by the MI no longer explained a significant amount of the variance of disordered eating after body shame was taken into account. When just the participants who were interviewed looking at their reflections in the mirror were evaluated, parent representation once again significantly contributed to the model, and the total amount of variance in disordered eating explained by the model raised to 55%. These findings demonstrate clearly that including the mirror in the interview is an integral component of the task, and that it taps into the importance of parent representations in a way that the questions of the interview do not do independently.

There are several proposed explanations for the impact of the mirror in accounting for variation in disordered eating in relation to parent representations. One possibility is that, as suggested by Kernberg (2007), seeing one's reflection elicits feelings and memories associated with being metaphorically "mirrored" by caregivers, as initially described by Winnicott (1967). This thereby supports the interviewee in expressing rich information regarding the impact of these relationships. Along the same lines, if the mirror elicits memories of being seen by early caregivers, it may also bring up feelings about being fed within those relationships. As suggested by Bloom and Kogel (1994), early parent-child relationships are also likely to be associated with feelings about having needs met via food during early feeding experiences, which impact eating behaviors later in life.

Another explanation is that looking at one's reflection in the mirror increases state self-objectification, which is a potentially threatening experience that heightens shame and the expectation of being negatively evaluated by others (McKinley & Hyde, 1996; Noll & Fredrickson, 1998). Per Bowlby's (1969) Attachment Theory, times of stress activate the individual's attachment system and representations. If an individual's attachment system is activated by the stress and danger associated with increased state self-objectification from looking at one's self in the mirror, then this too may enrich the quality of answers that the individual gives about the influence of her parents.

Conclusion and Future Directions

The findings of this study further contribute to a large body of literature that seeks to explain the development of body image disturbance and disordered eating. Unlike most other research, the current study aims to take into account the many ways in which culture and parent representations interact to explain variations in disordered eating and body dissatisfaction. This is made possible by the utilization of the MI, which incorporates aspects of Attachment Theory and Objectification Theory, while remaining flexible enough to allow women to discuss the impact of their parents and culture from a multitude of perspectives.

The presented results demonstrate that looking at one's reflection in the mirror while answering

questions about one's self, body, and parents has a powerful impact on the interviewee and the responses she provides. It further supports the notion that the impact of parent representations on disordered eating cannot be explained by a mutual relationship with body shame alone, and that the many meanings of food and eating that develop in the context of early caregiving relationships have a lasting influence into adulthood.

There are several limitations to the current study that would benefit from being addressed in future research. The current study focuses on a solely female population, and does not take into account the experiences of men, gender-queer, transgender, or intersex individuals. The sample additionally predominately identified as heterosexual, and had too few lesbian and bisexual participants to evaluate the role of sexual orientation. Individuals of different gender-identities and sexual orientations often have vastly different experiences of culture and their bodies than their heterosexual, female-identified counterparts.

The sample of this study was additionally predominately Caucasian and American-born, and therefore not did not adequately account for cultural, ethnic, and racial differences in body shame, self-view, and eating disturbances. The MI must be used cautiously with ethnically and racially diverse samples, as it cannot be assumed to be a culturally sensitive instrument without further investigation. The MI and its coding systems are structured with the expectation that interviewees will feel comfortable identifying the parts of themselves that they do and do not like. This perspective reflects a western bias that people will be willing to engage in discussing themselves in this way, as it does not take into account differing expectations across cultures regarding modesty and what is appropriate to say about oneself.

Future studies utilizing the MI with samples across different gender-identities, sexual orientations, races, ethnicities, and cultures would offer the opportunity to further understand the relationships between the body, culture, and parent representations. The present study demonstrated the importance of integrating the impact of parent representations and self-objectification when considering the body and eating behaviors, as these forces are intimately intertwined. Continued use of the MI provides the chance to further deepen our understanding of the meanings of food, beauty, and the body.

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Exploring the Links between Culture, Locus of Control and Self-Compassion and their Roles in the Formation of Weight Stigmatization

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The aim of this study was to examine the relationship between culture, locus of control, and self-compassion in conceptualizing weight stigmatization. Participants (N = 138) completed self-administered questionnaires, including: the Attitude Towards Obese Persons Scale (ATOP), Beliefs About Obese Persons Scale (BAOP), Anti-Fat Attitudes Scale (AFA), Multidimensional Health Locus of Control Scale (MHLC-Form B), Self-Compassion Scale (SCS), Individualism/Collectivism Scale (IND/COL), and Marlowe Crown Social Desirability Scale (MCSD Short-Form). Results suggest that self-compassion is a significant negative predictor of weight stigmatization, and had the potential to reduce weight bias. Collectivism was a significant negative predictor of weight stigmatization, and another variable that may reduce weight bias. Internal locus of control was a significant negative predictor of weight stigmatization, and a potential buffer of weight bias. These findings have implications for decreasing anti-fat prejudice and reducing weight stigmatization.

Keywords: culture, control, self-compassion, weight, stigma

Social identity is largely defined by physical appearance, as most societies believe that thinness and muscularity are determinants of success (Klaczynski, Daniel, & Keller, 2009; Puhl & Brownell, 2003). As a result, characteristics attributed to overweight people convey a devalued social identity in many different social contexts, such as employment, health care settings, and interpersonal relationships (Puhl & Brownell, 2003). In fact, children and adults view obese people more negatively than ethnic minorities, people with physical disabilities, facial disfigurements, and amputees (Hebl, King, & Lin, 2004; Klaczynski et al., 2009). Moreover, weight bias is so widespread that it occurs irrespective of an individual's own body weight, as overweight individuals themselves also express stigmatizing beliefs about others who are overweight (Puhl & Brownell, 2003; Puhl, Moss-Racusin, Schwartz, & Brownell, 2008). Thus, despite the shared human suffering, not even the individuals themselves who are suffering from marginalization in relation to weight are able to understand each other's pain (Savoy, Almedia, & Boxer, 2012).

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Weight bias is associated with a number of psychological variables, including diminished self-esteem, negative body image, limited social networks, comprised quality of life, and unemployment. Further, these social factors can lead to increased instances of depressive episodes, suicidal ideation, and suicide attempts (Latner, Stunkard & Wilson, 2005; Maclean et al., 2009; McHugh & Kasardo 2012; Puhl et al., 2008). Obesity is influenced by a variety of factors that include individual behavioral decisions, genetic or biological predispositions, and broader societal factors such as the marketing of low-cost unhealthy foods, agricultural policies, and neighborhood resources for healthy food (Bullock & Stambush, 2011; Niederdeppe, Shapiro, & Porticella, 2011). Despite this, people continue to believe that weight is easily controlled through exercise and reduced food consumption (Crandall & Schiffhauer, 1994; Maclean et al., 2009).

Beliefs Regarding the Controllability of Weight

Despite the psychological problems associated with obesity, individuals in society continue to attribute weight to internal controllable factors, resulting in negative stigma towards overweight and

obese individuals (Elfhag & Rössner, 2005). There is heavy emphasis on behavioral (lifestyle) approaches to obesity prevention, both in health sciences curricula and in health service programs (Maclean et al., 2009). These programs focus on the individual as the locus of change, by making the client personally responsible for all aspects of their situation, as opposed to more environmental or socio-ecological approaches. Health providers and obesity researchers often propose that losing weight is essentially about self-discipline and focus, despite the potential for social and environmental conditions such as poverty and living in high crime areas to make exercise and healthy eating regimes challenging (Maclean et al., 2009).

The ideological belief that people should be held accountable for the consequences of their actions can be explained by the attribution theory (Weiner, 1986), which proposes that the causal attributions people generally employ involve three dimensions (i.e., locus of control, controllability, and stability) that are relevant to the problems of weight stigmatization (Jeong, 2008). Attributions of controllability can result in stigma towards overweight individuals because they are perceived to be responsible for their own condition (Crandall et al., 2001; McHugh & Kasardo, 2012).

Locus of Control

The concept of locus of control (LOC) originated as a fundamental element of the social learning theory of personality (Rotter, 1966). LOC refers to the extent to which a person believes that reinforcement is dependent upon his or her own behavior or personal qualities. People with high internal LOC believe that they will receive reinforcement based upon their own behavior and actions. In contrast, people with high external LOC believe that regardless of their own behavior and actions, their fate rests in the hands of chance, or other more powerful bodies (Rotter, 1966). In other words, internal LOC refers to the perception of positive or negative events as being the consequence of one's own actions, whereas external LOC refers to the perception of positive or negative events as being unrelated to one's own behavior beyond personal control (McGinnies, Nordholm, Ward, & Bhanthumnavin, 1974). Studies have shown that internal and external beliefs about the controllability of one's weight are related to the formation of weight bias (e.g., Teixeira, Going, Sardinha, & Lohman, 2005).

Culture and LOC

Physical attractiveness is less likely to be an evaluative cue in cultural contexts where collectivism, rather than individualism, is the foundation for the dominant system of values (Dion, 1990; Shaffer, Crepaz, & Sun, 2000). In collectivist cultures, the group rather than the individual is emphasized. This suggests that social judgments, such as first impressions of others, are more likely to be based on group-related attributes (e.g., family or position in a social network), rather than on personal unique elements (e.g., physical attractiveness; Dion, 1990). In collectivistic cultures, the unit of social behavior is often a group rather than an individual, as compared to individualistic cultures where groups are actually more autonomous (Yamaguchi, Gelfand, Ohashi, & Zemba, 2005).

Markus and Kitayama's (1991) research found that Western cultures seek to relate the self as distinct from others, whereas Eastern cultures view the self as intertwined with others. More specifically, people in Asian collectivistic cultures are said to have an interdependent self-concept and thus emphasize concerns with interpersonal connectedness, caring for others, and social conformity. In contrast, Western individualistic cultures are said to have an independent self-concept that emphasizes concerns with autonomy, meeting personal needs, and individual uniqueness.

Individualistic and collectivist dimensions have been used to describe, explain, and predict differences in attitudes, values, and behaviors (Green, Deschamps, & Paez, 2005). A meta-analysis of cross-cultural research supports the idea that countries differ systematically in individualism and collectivism (Oyserman & Lee, 2008). As assessed through scale values, North Americans are higher in individualism and lower in collectivism than people from Asian countries such as China (Oyserman, Coon, & Kemmelmeier, 2002). Reviews of qualitative studies found that differences in individualism and collectivism are correlated with systematic differences in self-concept, nature of relationships with others, and cognitive style (Oyserman, 1993; Oyserman & Lee, 2008). These findings suggest that cognition is

affected by the social system in which one is raised (Yamaguchi et al., 2005). Further, Han (2013) found that Chinese infants were quicker to recognize others' faces (e.g., mother, father, or other caregiver) in comparison to their own, whereas Caucasian infants showed the opposite. The authors suggested that this could have been due to the fact that, in collectivist cultures, people tend to consider social context rather than individual/self context. The findings and suggestions of Han (2013) may also relate to other research that indicates Caucasian women pay excessive attention to their own appearance, resulting in eating disorders and self-stigmatization, while Asian women show a weaker tendency toward self-stigmatization and negative body image (Le Grange, Stone, & Brownell, 1998).

The attribution-value model of prejudice (Crandall et al., 2001) suggests that, across different cultures, the structure and function of this model might be very different, since the attributions people make may differ according to the social ideology of the cultural group. To test the attribution-value model of prejudice, Crandall et al. (2001) measured weight bias across six different nations including Australia, India, Poland, Turkey, the United States, and Venezuela. This study assessed anti-fat prejudice using the Anti-Fat Attitudes scale (AFA), and measured the cultural value people placed on weight gain using a series of items developed expressly for this study. Results showed that anti-fat attitudes (AFA) significantly correlated with the negative values people placed on weight-gain and the judgement of responsibility for one's weight. Furthermore, the simultaneous high presence of both controllability and cultural value predicted anti-fat prejudice, which indicated that attributions of controllability were most likely to express anti-fat prejudice. However, when the differences between individualistic and collectivistic cultures were examined, only the individualistic countries examined in this study added to the prediction, whereas it was absent in collectivist countries (Crandall et al., 2001). It may be concluded that, although individualism moderated the effect of prejudice, collectivism could not add to the prediction. This may further indicate that a collectivistic cultural orientation could not predict anti-fat attitudes in this study. Finally, the cultural value in the individualistic countries was more closely associated with prejudice against overweight people than in collectivist countries (Crandall et al., 2001).

Other research supports the finding that an individual's expression of weight bias may vary between ethnic identity and cultural group. Crandall and Martinez's (1996) study found that an American sample stigmatized overweight people significantly more than a Mexican sample. Latner et al.'s (2005) research also showed a cultural difference in the acceptance of obese individuals: African-American adults were significantly more tolerant of obese peers than Caucasian peers, indicating greater acceptance and less stigmatization. Moreover, Asian participants had less bias than Caucasian participants. This suggests that negative attitudes associated with obesity within multicultural societies may be dependent on cultural identity and levels of acculturation (Lewis & Van Puymbroel, 2008).

In an early study by McGinnies et al. (1974), the Internal-External Locus of Control (I-E) scale was administered to more than 1,500 students in Australia, Japan, New Zealand, Sweden, and the United States. Results showed that participants from Sweden and Japan scored the highest in external LOC, whereas participants from Australia, the United States, and New Zealand scored the lowest. Although this study was published in 1974, there has not been a more recent study that has produced significant intercultural differences in internal and external LOC across such a large sample of many populations. Despite this, research continues to find significant differences in LOC, and in particular health LOC among diverse ethnic populations. Using the Multidimensional Health Locus of Control Scale (MHLC), Wrightson and Wardle (1997) found intercultural differences in health LOC. Results showed significantly higher external LOC, including chance LOC (CHLC) and powerful others LOC (PHLC), scores for Americans than Europeans and Afro-Caribbean participants. However, results showed that South Asian participants were also significantly higher on internal LOC.

Research indicates weight bias is greater among individuals who hold obese individuals accountable for their health than among individuals who attribute obesity to uncontrollable factors (Klaczynski et al., 2009). However, since intercultural differences in

attributions towards internal and external LOC have also been supported, it is plausible to predict that obesity bias may still vary between individualist and collectivist beliefs (Wrightson & Wardle, 1997). Yamaguchi et al. (2005) found Japanese men were more optimistic about their collective ability in controlling a chance occurrence, relative to their personal ability, whereas American men were more optimistic about their personal ability, relative to collective ability. Thus, if attributions of controllability are different between cultural groups and research has shown attributions of controllability are predictive of weight bias, an individual's beliefs about their ability to control their health may be impacted by cultural identity (Puhl & Brownell, 2003). Although LOC definitions refer to an individual's perception of his or her own behavior, it may be that an individual's LOC has implications for attributing others' actions or faults to within-person characteristics, such that obesity stereotypes are stronger among those who believe obese people should be individually accountable for their own health.

Despite mixed findings of individualism and collectivism affecting cultural orientations towards internal and external LOC, it is important to examine the impact of broader societal factors and their influence on weight bias. Culture is an important variable to research, as theorists are increasingly incorporating culture as an important variable in their theories and models of psychological processes (Van de Vijver, Matsumoto, & Best, 2013).

Self-Compassion: A Potential Variable to Reduce Weight Bias

A variable that has not been examined with weight stigmatization is self-compassion, which refers to both concern with oneself and concern with others (Neff, 2003). A self-compassionate individual will offer non-judgemental understanding of their own pain, shortfalls, and suffering in the context of shared human imperfection (Wasylkiw, Mackinnon, & MacLellan, 2012). Self-compassion does not meet the need to increase one's self-esteem by separating oneself from others, or by making downward social comparisons (Neff, 2003). Neff and Pommier (2012) found associations between self-compassion and other-focused concern. In their study, self-compassion was significantly linked to perspective-taking, forgiveness, and less personal distress among a sample of college undergraduates.

Perspective-taking involves the active consideration of alternative viewpoints, framings, and hypotheses for the reasoning behind the outcome of people's actions, and has been shown to reduce social stereotypes (Galinsky & Moskowitz, 2000). Perspective-taking has been shown to increase the merging between the self and other, in which a greater self-target overlap increases the amount of self-descriptive traits ascribed to another individual. Further, the representation of the target constructed by the perspective-taker becomes more similar to the perspective-taker's own self-representation (Galinsky & Moskowitz, 2000). Increased self-target overlap occurs both when individuals imagine themselves in another's shoes, and when they imagine what it would be like to be that person. When an individual recognizes interconnectedness and equality with others, they are likely to be less judgmental of the self and others (Neff, 2003).

Since individuals who have high self-compassion are more likely to engage in perspective taking, they have a greater ability to identify with someone else's thoughts, feelings, and motivations (Kingsbury, 2009). Consequently, they may be less judgemental of individuals who are overweight or obese. Instead of following the stereotypes held by the general population, individuals who have high self-compassion may critically evaluate the accuracy of those stereotypes. However, very little empirical research has investigated whether individuals with high self-compassion have low levels of bias against overweight and obese individuals, and no direct conclusion thus far has been made. If self-compassion does indeed reduce stereotypical beliefs about overweight and obese people, research towards the reduction of weight stigmatization can be better focused (Jeong, 2008). Since research has not yet shown a dependable mechanism for reducing weight bias, it is important for researchers to continue finding effective ways to decrease anti-fat prejudice and explore ways to reduce weight stigmatization (McHugh & Kasardo, 2012).

The Current Study

This study purported to explore the relationship between LOC, culture, and self-compassion, and its influence on the construction of weight stigmatization. The vast majority of research on physical attractiveness stereotyping has not examined intercultural differences in weight bias, thus raising questions about cross-cultural generality of negative stereotypes projected towards overweight and obese individuals (Shaffer, et al., 2000). Moreover, there is limited cultural research conducted in Australia and since there is a rising obesity prevalence rate, it is important to understand how society in this country perceives overweight and obese individuals (Mercer, 2012). Since Australia is a multi-cultural society, understanding how the broader societal influence of perceptions towards overweight and obese individuals can target a wider population in reducing bias towards overweight and obese individuals (Mercer, 2012). Furthermore, self-compassion is gaining the attention of researchers as an effective way of relating to oneself, which may in fact affect how we see others (Neff, 2003; Neff & Pommier 2012). The present study examined self-compassion as a potential variable that may reduce negative beliefs and attitudes towards overweight and obese persons.

Hypotheses

1. Crandall et al. (2001) found that the simultaneous high presence of both controllability and cultural value predicted anti-fat prejudice. Thus, it was predicted that internal LOC and individualism would be a significant predictor of weight bias.

2. Collectivism and external LOC were predicted to be significant negative predictors of weight bias (Crandall et al., 2001).

3. Based on Neff and Pommier's (2012) findings of a significant association between self-compassion and other-focused concern, it was predicted that individuals who rated high in self-compassion would be a significant negative predictor of weight bias, over and above the effects of culture and LOC.

Method

Participants

A total of 138 participants (78 females; 60 males) volunteered to participate in the study. The majority of the sample consisted of Bachelor education students (n = 80) and included high-school students (n = 24), technical and further education (TAFE) students (n = 16), post-graduate students (n = 7), and Masters students (n = 11). All of the participants included in this study were above the age of 18, and the majority were young adults (M = 23.00). The sample also attempted to include a wide variety of participants from different cultural backgrounds. A majority of the sample were Australian (n = 84), and the other participants were American (n = 7), South American (n = 1), European (n = 10), Middle Eastern (n = 2), Asian (n = 28), and African (n = 6).

Measures

All participants completed the following scales: Attitude Towards Obese Persons (ATOP), Beliefs About Obese Persons (BAOP), Anti-Fat Attitudes (AFA), Self-Compassion Scale (SCS), Individualism/Collectivism Scale (IND/COL), Multidimensional Health Locus of Control Scales (MHLC-Form B), and the Marlowe-Crowne Social Desirability Scale (MCSD Short-Form).

Attitude Towards Obese Person's Scale (ATOP). Alison, Basile, and Yuker (1991) developed the ATOP, which consists of 20 items that measure prejudice towards obese persons (e.g., "Obese people are as happy as non-obese people") and reliability has been established (α = .76; Puhl, Moss-Racusin, & Schwartz, 2007). This scale uses a 6-point Likert scale that ranges from -3 (strongly disagree) to 3 (strongly agree).

Beliefs About Obese Person's Scale (BAOP). Alison et al., (1991) developed the BAOP, which consists of 10 items (e.g., "Obesity often occurs when eating is used as a form of compensation for lack of love or attention") and reliability has been established (α = .71; Puhl, Masheb, White, & Grilo, 2010). The BAOP measures the extent that one believes obesity is under the control of the obese person. This scale uses a 6-point Likert scale that ranges from -3 (strongly disagree) to 3 (strongly agree).

Anti-Fat Attitudes Questionnaire (AFA). Crandall and Schiffhauer (1994) developed the AFA, which consists of 13 items that measure attitudes toward overweight and obese individuals. The measure consists of three subscales: the Dislike subscale (α = .84), which measures apathy towards overweight/obese individuals (e.g., "I really don't like fat people much"); the Fear of Fat subscale (α = .79), which measures self-related concern about weight (e.g., "I feel disgusted with myself when I gain weight"); and the Willpower subscale (α = .66), which measures beliefs about controllability of weight (e.g., "People who weigh too much could lose at least some part of their weight through a little exercise"). This scale uses a 10-point Likert scale that ranges from 0 (very strongly disagree) to 9 (very strongly agree).

Self Compassion Scale (SCS). Neff (2003) developed the SCS, a 26-item questionnaire that measures individual self-compassion, which developers of this tool defined as being kind and understanding towards oneself in times of pain or failure rather than being harshly self-critical. The measure consists of six subscales: Self-Kindness, Self-Judgment, Common Humanity, Isolation, Mindfulness, and Overidentification. This scale uses a 5-point Likert scale that ranges from 1 (almost never) to 5 (almost always) and reliability has been established.

Individualism/Collectivism Scale (IND/COL). Oyserman (1993) created the IND/COL Scale, which measures how much an individual may identify with individualistic or collectivistic values. This scale consists of 24 items which include six subscales: Common Fate (e.g., "In the end a person feels closest to members of his/her own religious, national, or ethnic group"), Familialism (e.g., "Family is more important to me than almost anything else"), Interrelatedness (e.g., "To know who I really am, you must see me with members of my group"), Uniqueness (e.g., "It is important for me to be myself"), Freedom/Happiness (e.g., "My personal happiness is more important to me than anything else"), and Personal Achievement (e.g., "To know who I really am, you must examine my achievements and accomplishments"). This scale uses a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Multidimensional Health Locus of Control Scales (MHLC-Form B). The MDHL-Form B is an 18-item scale created by Wallston, Stein, and Smith (1994). It assesses a person's beliefs regarding whether his or her health status is determined by internal controllable factors, a matter of chance, or external control of others. The MHLC contains three subscales: Internality (e.g., "If I become sick, I have the power to make myself well again"), Powerful Others-Externality (e.g., "If I see an excellent doctor regularly, I am less likely to have health problems"), and Chance-Externality (e.g., "Often I feel that no matter what I do, if I am going to get sick, I will get sick"; Wallston & Wallston, 1978). This scale uses a 6-point Likert Scale (1 = strongly disagree, 6 = strongly agree).

The Marlowe-Crowne Social Desirability Scale (MCSD-Short-Form). The MCSD has been used as an additional measure to assess the impact of social desirability on self-report measures specific to the primary purpose of the investigation (Crowne & Marlowe, 1960). The short version of the scale has been developed by Ray (1984), which is an item that consists of 13 items, which was used for the purpose of this research. The MCDS was used in the present study to assess the effects of socially desirable responding from participants as some obtained course credit for participating.

Procedure

The Bond University Human Research Ethics Committee (BUHREC) approved all materials and procedures selected for the current study. Participants were recruited on the basis of convenience sampling through social networking websites. A unique survey address was distributed to participants containing a link to an explanatory statement outlining the purpose of the study, consent procedures, and an approximate time allocated for participation (25 minutes). Participants were presented with an explanatory statement outlining the study aims and consent, and were then required to complete demographic items and outcome measures. There were no identifying markers or questions on the survey, ensuring complete participant anonymity.

Design

Three independent variables including individualism-collectivism, LOC, and self-

compassion were measured using the IND/COL scale, MHLC scale, and the SCS. The dependent variable, weight stigmatization, was measured through the AFA questionnaire, BAOP scale, and the ATOP scale. Each independent variable was assessed in terms of what it added to the order of entry, as per Tabachnick and Fidell (2013). No multivariate outliers were present in the data.

Results

To analyze the results of the survey, a Hierarchical Multiple Regression (HMR) was conducted. The simultaneous presence of both individualism and internal LOC (measured by the Internality subscale from the MHLC scale) and the simultaneous presence of both collectivism and external LOC (measured by the Powerful Others subscale and the Chance subscale from the MHLC) were entered separately to predict AFA, ATOP, and BAOP scores. Self-compassion was analyzed to predict a unique amount of additional variance after controlling for culture and LOC.

To control for social desirability, the MCSD scale was added in Step 1 of the analysis. The three different subscales for the MHLC were analyzed separately in Step 2 of the analysis and IND/COL was added to Step 2. Self-compassion was entered in Step 3 of the analyses to examine whether it predicted weight stigmatization over and above the effects of culture and LOC. A total of nine HMR were performed.

An HMR was conducted to assess whether self-compassion would predict less AFA over and above the simultaneous presence of individualism (IND) and internal LOC (I/LOC). To predict I/LOC, the Internality subscale was used from the MHLC. In Step 1, social desirability was entered to control for response bias and only accounted for a small 0.20% of the variance, and was found to be a non-significant predictor. This indicated that social desirability did not significantly affect AFA. IND and I/LOC were entered simultaneously in Step 2, and contrary to expectations, only accounted for a small 0.20% of the variance and were found to be non-significant predictors. In Step 3, self-compassion was added to the regression, and it was found to be a significant negative predictor of AFA. This indicated that when self-compassion increased, AFA decreased, $F(1, 134) = 10.70$, $p < .001$. Specifically, self-compassion predicted 7.5% of the variance in AFA over and above the effects of individualism and I/LOC, as shown in Table 1.

Table 1
Hierarchical Multiple Regression Analysis Predicting Anti-Fat-Attitudes (AFA) from Social Desireability (SD), Individualism (IND), and Internality (I/LOC)

Predictor	B	β	R^2	Adjusted R^2	R^2 *Change*
Step 1			.002	-.006	.002
SDS	-.04	-.039			
Step 2			.003	-.019	.002
SDS	-.038	-.038			
IND	-.027	-.027			
I/LOC	.036	.036			
Step 3			.079	.050	.075**
SDS	-.088	-.088			
IND	.027	.027			
I/LOC	.086	.086			
SC	-.286**	-.287**			

*$p < .05$, **$p < .001$

In the second HMR and at Step 1 of the analysis, social desirability accounted for 0.00% of the variance, and was non-significant. In Step 2 of the analysis, IND and I/LOC accounted for a non-significant 0.90% of the variance in ATOP over and above social desirability. In Step 3 of the analysis, the model accounted for 0.00% of the variance, indicating that individualism, internal LOC, and self-compassion were unable to predict attitudes towards obesity, as displayed in Table 2.

In the third HMR, social desirability accounted for 0.90% of the variance, and was non-significant at Step 1. In Step 2, IND and I/LOC accounted for 4.70% of the variance, and I/LOC was found to be a significant negative predictor, $F(1, 134) = 3.290$, $p < .05$. When these variables were simultaneously added in Step 2, almost all of the variance was accounted for by I/LOC. As a result, as I/LOC increased, BAOP decreased. In Step 3, self-compassion only accounted for 0.20% of the variance, and was non-significant (see Table 3).

In the fourth HMR, social desirability only

accounted for 0.20% of the variance in AFA, and was non-significant. In Step 2, Powerful Others/LOC and collectivism accounted for 7.10% of the variance in AFA, $F(2, 132) = 5.01$, $p < .05$, with collectivism being a significant negative predictor and Powerful Others/LOC being a significant positive predictor. In Step 3, self-compassion accounted for 5.20% of the variance in AFA above and beyond the other variables, and was significant, $F(1, 134) = 7.795$, $p < .05$, indicating that self-compassion was able to predict AFA over and above the effects of Powerful Others/LOC and collectivism, as displayed in Table 4.

In the fifth HMR, the Chance subscale was analyzed simultaneously with collectivism. In Step 1, social desirability accounted for only 0.20% of the variance in AFA and was non-significant. In Step 2, Chance/LOC and collectivism only accounted for a small 0.16% of the variance in AFA, which was non-significant. In Step 3 of the analysis self-compassion accounted for 5.80% of the variance over and above the effects of the other variables. Self-compassion was found to be a significant negative predictor of AFA, $F(1, 134) = 8.23$, $p < .05$. Therefore, AFA were greater for individuals with lower self-compassion, as displayed in Table 5.

The sixth HMR found social desirability at Step 1 accounted for a non-significant 0.00% of the variance. In Step 2, collectivism and Powerful Others/LOC only accounted for 0.50% of the variance in ATOP , which was non-significant. In Step 3, self-compassion accounted for 0.00% of the variance in ATOP, and was non-significant as displayed in Table 6.

The seventh HMR found social desirability accounted for a non-significant 0.00% of the variance. In Step 2, collectivism and Chance/LOC accounted for a small 0.20% of the variance of ATOP, which was non-significant. In Step 3, self-compassion accounted for 0.10% of the variance in ATOP above and beyond the other vairables and was non-significant, as displayed in Table 7.

The eighth HRM used the Powerful Others/LOC subscale from the MDHL, collectivism, and self-compassion to predict BAOP. In Step 1, social desirability accounted for 0.10% of the variance in BAOP and was not a significant predictor of BAOP $F(1,134) = 1.18$, $p = .28$. In Step 2, collectivism and Chance/LOC accounted for a small 0.03% of additional variance of BAOP and were not significant predictors, $F(2, 132) = 1.10$, $p = .34$. In Step 3, self-compassion accounted for 0.00% of the variance in BAOP and was not a significant predictor of BAOP, $F(1, 131) = .03$, $p = .87$, as displayed in Table 8.

The final HMR found that social desirability accounted for 0.90% of the variance in BAOP and was non-significant. In Step 2, collectivism and Chance/LOC accounted for 6.10% of the variance above and beyond social desirability, significantly predicting ATOP, $F(2, 132) = 4.296$, $p < .05$. Thus, when collectivism and Powerful Others/LOC increased, BAOP increased. In Step 3, self-compassion accounted for 0.10% of the variance in ATOP but was non-significant, as displayed in Table 9.

Summary of Significant Results

In the first analysis, self-compassion was found to be a significant negative predictor of AFA. When self-compassion increased, AFA decreased. Internal LOC and individualism were not found to be significant predictors of AFA. In the third analysis, the simultaneous presence of both individualism and internal LOC were found to be significant predictors of BAOP. Almost all the variance, however, was accounted for by internal LOC. Specifically, as internal LOC increased, positive beliefs about obese people decreased. Self-compassion was not a significant predictor of BOAP.

In the fourth analysis, collectivism and Powerful Others/LOC significantly predicted AFA. Specifically, when collectivism increased, AFA decreased. Powerful Others/LOC did not decrease AFA scores. In addition, self-compassion significantly predicted AFA over and above the effects of collectivism and Powerful Others/LOC. As self-compassion increased, AFA decreased. In the fifth analysis, self-compassion significantly predicted AFA over and above the effects of collectivism and Chance/LOC. Specifically, as self-compassion decreased, AFA increased. Collectivism and Chance/LOC were not found to be significant predictors of AFA. In the ninth analysis, collectivism and Chance/LOC together significantly predicted BAOP. Specifically, when collectivism increased, BAOP increased, but Chance/LOC had a greater impact than collectivism. And finally, self-compassion was not a significant predictor of BAOP.

Table 2
Hierarchical Multiple Regression Analysis Predicting Attitudes Toward Obese Persons (ATOP) from Social Desirability (SD), Individualism (IND), Internality (I/LOC)

Predictor	B	β	R^2	Adjusted R^2	R^2 Change
Step 1			.000	-.007	.000
SDS	.018	.086			
Step 2			.000	-.013	.009
SDS	.029	.089			
IND	-.003	.089			
I/LOC	-.095	.087			
Step 3			.010	-.020	.000
SDS	.033	.090			
IND	-.006	.091			
I/LOC	-.098	.089			
SC	.020	.089			

*$p < .05$, **$p < .001$

Table 3
Hierarchical Multiple Regression Analysis Predicting Beliefs About Obese Persons (BAOP) from Social Desirability (SD), Individualism (IND), Internality (I/LOC), Self-Compassion (SC)

Predictor	B	β	R^2	Adjusted R^2	R^2 Change
Step 1					
SDS	.094	.087	.009	.001	.009
Step 2					
SDS	.118	.087	.047	.034	.047*
IND	.003	.087			
I/LOC	-.219*	.086			
Step 3			.002	.029	.002
SDS	.125	.089			
IND	-.005	.089			
I/LOC	-.226	.087			
SC	.043	.088			

*$p < .05$, **$p < .001$

Table 4
Hierarchical Multiple Regression Analysis Predicting Anti-Fat Attitudes (AFA) from Social Desirability (SD), Collectivism (COL), Powerful Others (PO/LOC)

Predictor	B	β	R^2	Adjusted R^2	R^2 Change
Step 1			.002	-.006	.002
SDS	-.040	.087			
Step 2			.072	.051	.071*
SDS	-.014	.084			
COL	-.198*	.086			
PO/LOC	.251*	.092			
Step 3			.124	.097	.052*
SDS	-.055	.086			
COL	-.129	.093			
PO/LOC	.240	.087			
SC	-.238*	.085			

*$p < .05$, **$p < .001$

Table 5
Hierarchical Multiple Regression Analysis Predicting Anti-Fat Attitudes (AFA) from Social Desirability (SD), Collectivism (COL), Chance (Chance/LOC)

Predictor	B	β	R^2	Adjusted R^2	R^2 Change
Step 1			.002	-.006	.002
SDS	-.040	.087			
Step 2			.018	-.005	.016
SDS	-.018	.089			
COL	-.120	.091			
Chance/LOC	.043	.087			
Step 3			.076	.047	.058*
SDS	-.062	.088			
COL	-.049	.092			
Chance/LOC	.051	.085			
SC	-.251*	.087			

*$p < .05$, **$p < .001$

Table 6
Hierarchical Multiple Regression Analysis Predicting Attitudes Towards Obese Persons (ATOP) from Social Desirability (SD), Collectivism (COL), Powerful Others (PO/LOC)

Predictor	B	β	R^2	Adjusted R^2	R^2 *Change*
Step 1			.000	-.007	.000
SDS	.018	.086			
Step 2			.006	-.17	.005
SDS	.003	.088			
COL	.077	.094			
PO/LOC	-.013	.091			
Step 3			.006	-.024	.000
SDS	.000	.090			
COL	.084	.098			
PO/LOC	-.014	.081			
SC	-.022	.090			

*$p < .05$, **$p < .001$

Table 7
Hierarchical Multiple Regression Analysis Predicting Attitudes Towards Obese Persons (ATOP) from Social Desirability (SD), Collectivism (COL), Chance (Chance/LOC)

Predictor	B	β	R^2	Adjusted R^2	R^2 *Change*
Step 1			.000	-.007	.000
SDS	.018	.086			
Step 2			.021	-.001	.021
SDS	-.007	.088			
COL	.088	.090			
Chance/LOC	.126	.086			
Step 3			.022	-.088	.001
SDS	-.011	.090			
COL	.095	.094			
Chance/LOC	.127	.086			
SC	-.025	.089			

*$p < .05$, **$p < .001$

Table 8
Hierarchical Multiple Regression Analysis Predicting Beliefs About Obese Persons (BAOP) from Social Desirability (SD), Collectivism (COL), Powerful Others (PO/LOC)

Predictor	B	β	R^2	Adjusted R^2	R^2 *Change*
Step 1			.009	.001	.009
SDS	.094	.087			
Step 2			.025	.003	.026
SDS	.081	.088			
COL	.030	.094			
PO/LOC	.118	.097			
Step 3			.025	-.005	.000
SDS	.079	.090			
COL	.034	.098			
PO/LOC	.117	.091			
SC	-.014	.090			

*$p < .05$, **$p < .001$

Table 9
Hierarchical Multiple Regression Analysis Predicting Beliefs About Obese Persons (BAOP) from Social Desirability (SD), Collectivism (COL), Chance (Chance/LOC)

Predictor	B	β	R^2	Adjusted R^2	R^2 *Change*
Step 1			.009	.001	.009
SDS	.094	.087			
Step 2			.069	.048	.061*
SDS	.062	.087			
COL	.091*	.088			
Chance/LOC	.240*	.085			
Step 3			.070	.042	.001
SDS	.057	.088			
COL	.099	.082			
Chance/LOC	.241	.085			
SC	-.028	.087			

*$p < .05$, **$p < .001$

Discussion

The aim of the study was to explore the relationship between culture, LOC, and self-compassion in conceptualizing weight stigmatization. The first hypothesis that individualism and internal LOC would significantly predict weight bias was supported; however, unexpected findings were found. Individualism and internal LOC were significant predictors of BAOP, but almost all the effects were accounted for by internal LOC, which was found to be a significant negative predictor. Thus, contrary to expectation, internal LOC decreased BAOP. Past research using the MHLC scale has shown the predictive utility of LOC in understanding various behaviors including smoking reduction, birth control utilization, weight loss, information-seeking, adherence to medication regimes, and fighting diseases (Wallston & Wallston, 1978).

The second hypothesis, that collectivism and external LOC would predict weight bias, was partially supported. Collectivism and Powerful Others/LOC significantly predicted AFA; however, collectivism decreased AFA, while Powerful Others/LOC did not. Furthermore, collectivism and Chance/LOC jointly significantly predicted BAOP; while greater collectivism decreased BAOP, Chance/LOC did not decrease BAOP. These findings suggest that, although collectivism was able to decrease weight bias, external LOC (i.e., as measured with Chance and Powerful Others/LOC variables) did not decrease weight bias. These results indicate that individuals that identified with collectivist beliefs were less likely to have weight bias.

This suggests that social judgments, such as first impressions of others, are less important to individuals who identify with collectivist orientations. These findings are supported by research such as Crandall and Martinez's (1996) and Latner et al.'s (2005) studies, who found multicultural differences in obesity bias. Despite the significant effects of collectivism, Powerful Others/LOC and Chance/LOC did not decrease the effects of weight stigmatization. As mentioned above, because of the lack of internal and predictive validity of the MHLC, future research should consider using a more general measure of LOC, such as Rotter's (1966) Locus of Control Scale, and look at other variables such as self-efficacy.

The third hypothesis, that self-compassion would significantly reduce weight stigmatization over and above the effects of culture and LOC, was supported. Specifically, self-compassion was a significant negative predictor of AFA, over and above the effects of collectivism and Powerful Others. This novel finding is particularly important, as this reflects that self-compassion may be a dependable mechanism for reducing anti-fat prejudice, and thus reducing weight stigmatization. Future studies should seek to examine this relationship further, in order to clarify how this association may be used to inform intervention.

The current study represents one of the first efforts to examine self-compassion in the conceptualization of weight stigmatization. Research indicates that weight bias occurs irrespective of an individual's body weight; thus, even people who are overweight are externalizing the negative attributes that society has constructed (Puhl & Brownell, 2003; Puhl et al., 2008). This form of self-devaluation and self-condemnation has a great impact on one's psychological health (Latner et al., 2005; Maclean et al., 2009; McHugh & Kasardo 2012). However, since self-compassion has been found to be negatively associated with weight bias, this variable may be incorporated into weight stigmatization reduction efforts. Self-compassion has been associated with adaptive psychological functioning, predicted positive mental health, and serves as a buffer against the negative consequences of self-judgement, self-criticism and shame (Neff, 2003). Furthermore, Wasylkiw et al. (2012) found that self-compassion was associated with less body preoccupation, fewer concerns about weight, and greater appreciation towards one's body in young female undergraduate students.

Implications and Future Research

It is of interest then that self-compassion training may be beneficial for individuals in the promotion of positive body image, which may potentially reduce the effects of weight stigmatization and bias. Self-compassion can be promoted through individual educational-based approaches. Furthermore, this may be promoted through media health campaigns in order to target a wider audience, thus increasing their ability to critically analyze their judgments and understand the perspectives of those who are overweight and obese.

The critical findings from this research were that self-compassion and collectivism were each significant negative predictors of weight stigmatization, thus reducing bias against overweight and obese individuals. Moreover, self-compassion was able to predict a unique amount of additional variance over and above the effects of collectivism.

Limitations

The findings of this study had mixed results as the AFA questionnaire, BAOP scale, and ATOP scale were together expected to be predicted by other variables. The ATOP was not significantly predicted by other variables in the experiment. Although the AFA and BAOP were predicted by other variables, the results of the HMR did not correspond. Future replication studies should seek to further explore why this may have occurred. For instance, although self-compassion predicted AFA, it was not a significant predictor of BAOP.

Although researchers attempted to incorporate a culturally diverse sample in the current study, the majority of participants were from Australia; however, a significant effect of culture for collectivism was still found. Thus, despite the limited amount of participants from collectivist cultures, collectivism was still a significant predictor of weight stigmatization, which may also reduce bias. The current study used a non-experimental design for data collection; thus, causal relationships cannot be established.

Further issues with the design include ordering effect, as the scales were not counterbalanced. Measurement issues that exist within the MHLC scale may also reduce the predictive validity of this study, as results that were inconsistent with prior research were found for the multidimensional health LOC. In spite of these limitations, this research was able to find significant novel variables that reduced the effects of weight stigmatization and also established constructive ways in conceptualizing bias of overweight and obese persons.

Conclusion

Self-compassion is a novel variable that has not been conceptualized with weight stigmatization prior to this research. The findings from this study imply that self-compassion is able to reduce weight stigmatization over and above the effects of collectivism, which was also found to be a significant negative predictor of weight stigmatization. Through understanding the underlying causes of weight stigmatization, a more comprehensive construction of weight stigmatization can be formed. This in turn will further help to evaluate existing models of stigmatization as well as promote the development of new models (Lewis & Van Puymbroel, 2008; Puhl & Brownell, 2003).

It is important to thoroughly understand the causes of weight stigmatization and the social and psychological consequences of it on overweight and obese individuals. The stigmatization of obesity itself may independently contribute to the health risks associated with obesity (Maclean et al., 2009). Consequences of weight bias may lead individuals to isolate themselves or socially withdraw from society, which could contribute to the exacerbation of obesity through increasing the likelihood of overeating and sedentary activity (Puhl & Brownell, 2003). Further research is necessary to continue exploring the role of these variables, in addition to other related psychological variables such as adverse childhood experiences (Felitti et al., 1998) and the stereotype threat spillover (Inzlicht & Kang, 2010) in order to more comprehensively inform theory and treatment models.

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Development of a Body Dissatisfaction Scale Assessment Tool

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The present research details the development of a new pictorial scale (Body Dissatisfaction Scale) to be used in the measurement of body dissatisfaction. The scale comprises nine female and nine male images of computer generated bodies that increase successively in body weight. Using a sample of 190 students (female = 130, male = 60) results showed that the new scale exhibits good validity, with participants being able to correctly identify body weight differences between all bodies in the scale. Evidence for construct validity was demonstrated by significant correlations between ratings of perceived actual body size using the current scale and participants' BMI. Body dissatisfaction measured using the current scale was also negatively correlated with a measure of body appreciation. Test-retest reliability remained stable over a 5 week period. The scale improves on previous pictorial scales by offering both male and female versions while offering improved realism and consistency between images.

Keywords: body image, body dissatisfaction, body weight, scale development

As the occurrence of eating disorders in young women has grown in Western society in recent years (Smink, van Hoeken, & Hoek, 2012), research into body image dissatisfaction has increased, with a large amount of research highlighting a link between body image disturbances and eating disorders (Cattarin & Thompson, 1994; Garner, 2002). Indeed, a large number of females and males in Western society are dissatisfied with some aspect of their bodies (Tiggemann, 2011). Consequently, the measurement of body dissatisfaction is an important aspect of research concerned with body image dissatisfaction and disturbances.

Grogan (2008) defines body dissatisfaction as "a person's negative thoughts about his or her own body" (p. 4). This includes judgements about size, shape, and muscle tone and generally involves a discrepancy between one's own body type and an ideal body type. Although there are several techniques for measuring a discrepancy between an individual's own body weight and their ideal body weight, figure rating scales are most commonly used (e.g., Gardner, Jappe, & Gardner, 2009; Stunkard, Sorensen, & Schulsinger, 1983; Thompson & Gray, 1995). This type of scale typically consists of a set of drawn stimuli that vary in body weight from underweight to overweight. To measure body dissatisfaction, participants are normally asked to choose a figure they think (a) best represents their perceived actual body shape and (b) best represents their ideal body shape. Body dissatisfaction is then defined as the discrepancy between a participant's actual and ideal body.

There has been extensive use of these types of figure rating scales (e.g., Gardner et al., 2009; Stunkard et al., 1983; Thompson & Gray, 1995) to represent different body weights when researching body dissatisfaction. This has proved useful in enabling researchers to keep the properties of stimuli consistent while changing waist to hip ratios, body mass, and size. However, there are various problems

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with these types of stimuli. For example, line-drawn figures have been said to lack realism and ecological validity and can therefore often appear unrealistic (Tassinary & Hansen, 1998). Thompson and Gray (1995) noted that previous line drawn scales have figures with disproportionate arms and legs, differential thickness between right and left arms, or a lack of separation between the arms and bodies in obese drawings. This has led to further criticism of research into physical attraction (e.g., Singh, 1993; Swami, Furnham, & Joshi, 2008) that has previously relied on line-drawn stimuli (Bateson, Cornelissen, & Tovée, 2007; Gardner, Friedman, & Jackson, 1998). Often, line-drawn figures (e.g., Singh, 1993) that vary in waist to hip ratio (WHR) are modified by altering the width of the torso, but this also changes apparent Body Mass Index (BMI), meaning it is not possible to say whether attractiveness ratings are made on the basis of WHR, BMI or both. In addition, these figures are usually drawn by a professional artist (e.g., Thompson & Gray, 1995). Therefore, the increase in body weight between figures is subject to the artist's estimation of increase in body weight, rather than a metrically precise increment. This results in inconsistent size differences between successive figures (Gardner et al., 1998).

To address some of the previous problems with the measurement of figural stimuli, Gardner et al. (2009) developed a line-drawn figure rating scale where the bodies were based on real body dimensions. However, although these bodies can be said to change in size, the way real bodies do, using line-drawn stimuli still lacks realism (Tassinary & Hansen, 1998). Therefore, to address these issues with line-drawn stimuli, Swami, Salem, Furnham, and Tovée (2008a) developed The Photographic Figure Rating Scale (PFRS). This scale comprises 10 photographic images of real women varying in BMI from extremely thin to obese and has been used to assess body dissatisfaction.

Although the PFRS offers improvement on line-drawn scales by using images of real bodies, this can cause problems when trying to maintain consistency. For example, it has been noted that the bodies used in the PFRS vary in leg length (Swami et al., 2008a). This is problematic since leg to body ratio has been shown to affect attractiveness preferences in female bodies (Swami, Einon, & Furnham, 2006) and, therefore, when being used in the measurement of body dissatisfaction, some bodies may appear more attractive not because of their size but because of a more appealing leg to body ratio. In addition, the bodies used in the PFRS had their faces obscured in order to maintain consistency across images. It could be argued that this also reduces the ecological validity of the images as bodies in real life are rarely seen without faces. Most importantly, there is currently no male version of the PFRS.

Accordingly, our goal was to develop and report the psychometric evaluation of a new pictorial measure of body image that has two comparable versions which can be used with both females and males. The Body Dissatisfaction Scale (BDS) comprises images of computer generated bodies. Using computer generated bodies improves on the drawn stimuli used in previous figure rating scales (e.g., Stunkard et al., 1983; Thompson & Gray, 1995). Computer generated images are more realistic and life-like while also allowing for accurate control of size and shape differences between successive bodies. Using computer generated stimuli allows variation in body proportions, such as leg to body ratio, to be controlled for. This cannot be controlled for when using photographic images. It also gives greater control over variation in physical characteristics like skin and facial features (identity). Therefore, as skin and facial features can be controlled, there is no need to obscure faces in the BDS, and presenting a body with the face will likely increase the ecological validity of the scale.

Although using computer generated stimuli can never be completely ecologically valid, it can reduce some of the problems found when using photographic images and is especially useful in an experimental setting where greater control is needed. Indeed, the use of computer generated stimuli is being used increasingly in body perception research (e.g., Crossley, Cornelissen, & Tovée, 2012; Tovée, Edmonds, & Vuong, 2012). However, there is currently no pictorial scale using computer generated stimuli that has been psychometrically evaluated for measuring body dissatisfaction. This study is the first to develop and test a scale using this new type of computer generated stimuli.

The aim of our research was to examine the validity and test-retest reliability of both the female and male versions of the BDS. Similar to previous research (e.g., Swami et al., 2008a; Thompson & Gray, 1995), the scale was initially tested for validity by assessing the extent to which participants could successfully distinguish the size differences between the nine bodies. It was expected that, for the scale to be valid, participants would be able to do this successfully. In line with previous research (Swami et al., 2008a), construct validity was assessed by examining the correlation between the BDS and a measure of positive body image. It was hypothesized that these variables would be negatively correlated. In addition, the correlation between participants' perceived actual body size ratings and their Body Mass Index (BMI) was also used to asses construct validity. It was predicted that there would be a positive correlation between participants' BMI and their perceived actual body. Finally, test-retest reliability was examined by the correlation of body dissatisfaction scores from a first and second testing, and this was expected to be positively correlated to show reliability.

Method

Participants

Participants were 130 females and 60 males. They were all Psychology students from Nottingham Trent University. Participants were given research credits in exchange for taking part in the research.

Of the female participants, 76.9% were White European, 10.8% were of Asian descent, 7.7% had mixed ethnicity, and 4.6% were of African Caribbean descent. Of the male participants, 83.3% were White European, 8.3% were of Asian descent, 5.1% were of African Caribbean descent, and 3.3% were of mixed ethnicity.

Materials

Body Dissatisfaction Scale (BDS). The scale was developed by creating an average sized body using DAZ Studio 4 software (www.daz3d.com). Using this software the average sized body was systematically altered to create 4 bodies which were successively thinner than the original body and 4 bodies which were larger than the original body. Thus, nine bodies were created in total which range from extremely thin to obese. This was done for both the female (see Appendix A1) and male bodies (see Appendix A2), creating two versions of the scale.

Following Crossley et al. (2012), the bodies, without clothing, were then exported out of DAZ studio into 3ds Max (www. autodesk.com). 3ds Max is able to estimate the height of the body in real world measurements (cms). In addition, 3ds Max calculates the volume of the body. Once volume is known the weight of the body can be estimated by multiplying the density of either the average young female body (1.04 g/cm^3) or the average young male body (1.06 g/cm^3). This enables the BMI of each body to be calculated by dividing the weight (kg) by the height (m) squared (see Appendix B for measurements, weights, and BMIs). The BMIs of the nine bodies in both the female and male scale range from underweight to obese: bodies 1-3 are underweight, bodies 4-6 are in the normal range and bodies 7-9 are overweight/obese.

All the bodies are depicted at a 25 degree angle to enable more visual information about the 3D shape of the body to be made available. This gives a more realistic portrayal of the human body shape that would not be achieved by using simple front view bodies. Gardner et al. (2009) recommended omitting facial and body features in pictorial stimuli that reflect obvious Caucasian ethnicity. However, since removing or obscuring the facial features would reduce the ecological validity of the images, the bodies are instead presented in grey scale and without hair to minimize the effects of race or ethnicity. It is therefore thought that when presenting the bodies in this way there would be little effects of perceived ethnicity. All bodies are depicted wearing black shorts and a T-shirt, so the size and shape of the body is clearly visible.

The BDS scale can be used to measure body dissatisfaction by numbering the bodies from 1 to 9 (in ascending order of size); each body is scored as one body unit. Participants are asked to choose the body they would most like to look like (ideal) and the body they thought was closest to their perceived actual body shape (actual). The discrepancy between the participant's selected actual and ideal body was

the participant's body dissatisfaction score. For example, if a participant chose body number 5 as their actual body and body number 2 as their ideal body, their body dissatisfaction score would be 3. A higher score means a greater discrepancy between perceived ideal and actual body chosen, meaning greater dissatisfaction. This difference score does not reflect the direction of the body dissatisfaction and participants may have chosen an ideal body that was thinner or heavier than their chosen actual body. The highest body dissatisfaction score a participant could receive would be 8 if they selected body 1 and body 9. If a participant has no body dissatisfaction, i.e., they selected the same number body for both their perceived ideal and actual body, they would have a score of zero.

Body Appreciation Scale (BAS; Avalos, Tylka, & Wood-Barcalow, 2005). The BAS comprises 13 items which are intended to measure body appreciation. Items are statements for which participants are asked to select a response. Some example items from the BAS include "I feel that my body has at least some good qualities" and "My self-worth is independent of my body shape or weight." Items are scored on a 5 point scale (1 = *never*, 2 = *seldom*, 3 = *sometimes*, 4 = *often*, 5 = *always*) and are averaged to obtain an overall body appreciation score. A higher score indicates higher body appreciation. The BAS has been shown to have good internal consistency (α = .94). Construct validity was demonstrated by a positive correlation with a tendency to evaluate one's appearance favorably (r = .68), and negative correlations with body preoccupation (r = -.79) and eating disorder symptomatology (r = -.60). In addition, test-retest reliability was found to be good (r = .90) over a 3 week period.

Initial validation task. Following Swami et al.'s (2008a) and Thompson and Gray's (1995) validation of the PFRS and the CDFRS, the BDS was tested for validity by assessing the extent to which participants could successfully identify the body weight differences between the nine bodies. In Swami et al. (2008a) and Thompson and Gray (1995), participants were asked to order the images from thinnest to heaviest and the percentage of correctly positioned bodies was used to establish validity. In the current research, participants were given a two alternative forced choice (2AFC) task in which participants were presented with pairs of bodies. Participants had to decide which body they thought was the thinnest body out of the pair. All possible pair combinations were presented in a random order. The percentage of combinations where the participants correctly identified the thinnest body was used to assess the ability of participants to distinguish the body weight differences between all bodies and therefore validity of the BDS.

In order for the scale to be valid it is essential that participants are able to see that all the bodies vary in body weight. It is not sufficient to tell participants that bodies are presented from underweight to obese before the scale is used. In addition, this means that in further research the bodies do not need to always have to be presented from underweight to obese and could be presented in a variety of ways if it is established that participants can distinguish weight differences between all the bodies.

Test-retest reliability. Test-retest reliability was examined by the correlation of body dissatisfaction scores from the initial testing and then again after five weeks. There is no evidence to establish that one particular time period is best for reliability testing in pictorial body dissatisfaction measurement scales. The length of time does affect the reliability of a measure to the extent that the first testing may influence the second testing. Previous studies have used one week (Thompson & Gray 1995) and three weeks (Swami et al., 2008a). The current research chose five weeks as it seemed a suitable amount of time for the first testing to no longer have an effect on the second testing.

Demographics. Participants were also asked their age, sex, ethnic origin, and self-reported height and weight. Height and weight were used to calculate each participant's BMI.

Procedure

Participants were presented with the bodies as a scale on paper, with images going from left to right, from underweight to obese so as to measure their perceived body dissatisfaction. Bodies were numbered from 1 to 9 (in ascending order of size) and each body is scored as one body unit. Participants were asked to choose the body they would most like to look like (ideal) and the body they thought was

closest to their perceived actual body shape (actual). This was a categorical judgment and participants could only choose one body each time. Female participants were presented with the female version of the scale and male participants were administered the male version.

Participants were then given the 2AFC task to complete. Participants completed this task in SuperLab 4.5 (www.superlab.com) on a 44.3 x 25.4 cm screen. Participants had to decide which body they thought was the thinnest body out of each pair.

Five weeks after the initial test, participants were invited to use the new rating scale to measure their body image again. Of the original sample, 64 female participants and 20 male participants returned to complete the scale for a second time.

Results

Female Version

Descriptive statistics. The descriptive statistics for the female participants are presented in Table 1.

Initial validation. Participants were assessed on their performance on the 2AFC validation task. Same body pairings were removed from the analysis, meaning 72 pair combinations for each participant were analyzed. Due to a computer error, two of the pair combinations were displayed incorrectly for 30 of the participants and therefore the responses for these combinations were removed from the analysis.

The results showed that on average participants were able to correctly identify the thinnest body 97.63% ($SD = 2.44$) of the time. A chi-square analysis showed that amount of times participants correctly identified the thinnest body was significantly higher than chance $\chi^2(1, N = 130) = 8440.82$, $p < .001$. This validation task was conducted as to attain whether participants were able identify the thinnest body out of each pair and therefore detect body weight differences between the bodies. The high percentage correct found here suggests that participants are accurately able to detect the body weight differences between the nine bodies.

Construct validity. Validity was assessed by the correlation between body dissatisfaction scores on the BDS and body appreciation scores on the BAS. Results showed a significant negative correlation, $r(128) = -.60$, $p < .001$, providing evidence of construct validity. To provide further validation, the correlation between participants' ratings of their perceived actual body size and their BMI was assessed. This was also found to be significant, $r(128) = .77$, $p < .001$, suggesting that the scale can be used to accurately assess perception of one's own body size.

Table 1
Female Participants Mean Scores on all Measures

	M	SD
Perceived actual body score	5.58	1.31
Perceived ideal body score	4.08	1.0
Body dissatisfaction score	1.61	.90
BAS score	3.44	.62
BMI	23.1	3.50

Table 2
Male Participants Mean Scores on all Measures

	M	SD
Perceived actual body score	5.07	1.54
Perceived ideal body score	4.90	.82
Body dissatisfaction score	1.49	.82
BAS score	3.54	.64
BMI	24.12	3.83

Test-retest reliability. The correlations between scores for perceived actual body, ideal body and body dissatisfaction from the first testing and five weeks after were analyzed for test-retest reliability. These were all found to be significant: perceived actual body, $r(62) = 0.81$, $p < .001$; ideal body, $r(62) = 0.89$, $p < .001$; and body dissatisfaction, $r(62) = 0.82$, $p < .001$. Scores obtained at the first and second testing were highly correlated, suggesting that the scale is a reliable measure of body dissatisfaction.

Male Version

Descriptive statistics. The descriptive statistics for the male participant sample are presented in Table 2.

Initial validation. Participants were assessed on their performance in the 2AFC validation task. In total, 72 pair combinations were analyzed for each

participant to identify if participants had correctly selected the thinnest body out of each pair. Due to a computer error, one of the pair combinations was displayed incorrectly for seven of the participants and therefore the responses for these combinations were removed from the analysis.

Results showed that participants were able to correctly select the thinnest body 98.04% (SD = 1.82) of the time when the bodies were presented in pairs. A chi-square analysis showed that amount of times participants correctly identified the thinnest body was significantly higher than chance $\chi^2(1, N = 60) = 3980.70$, $p < .001$. Being able to correctly identify the thinnest body out of each pair of bodies suggests that body weight differences between the nine male bodies are easily identifiable.

Construct validity. A significant negative correlation was found between body dissatisfaction on the BDS and body appreciation scores, $r(57) = -.46$, $p < .001$, providing evidence of construct validity. The correlation between participants' ratings of their perceived actual body size and their BMI was also found to be significant, $r(57) = 0.83$, $p < .001$, providing further validation.

Test-retest reliability. To examine test-retest reliability, original scores for perceived actual body, ideal body, and body dissatisfaction were correlated with scores from five weeks after the initial testing. All three correlations were found to be significant: perceived actual body, $r(18) = 0.96$ $p < .001$; ideal body, $r(18) = 0.88$ $p < .001$; and body dissatisfaction, $r(18) = 0.97$ $p < .001$.

Discussion

The results of the present research suggest that both the male and female version of the BDS exhibit good construct validity and test-retest reliability over a five-week period. It would appear that participants can easily detect the subtle differences in size between the nine bodies on the scale. The significant correlations with the BAS suggest that both the female and male version of the BDS have good construct validity. Perceived actual body size was highly correlated with participants BMI for both male and female versions, which indicates that the BDS is a useful tool in assessing perception of one's own body size and provides further evidence of construct validity.

The findings support the use of the BDS in body image measurement for females and males. The current scale offers improvement on scales which have used line-drawn stimuli (e.g., Stunkard et al., 1983; Thompson & Gray, 2005) by offering greater realism and providing more life-like figures. By using computer generated figures, it also avoids the problems associated with using images of real people (e.g., PFRS), such as biases in judgements associated with certain racial groups. It also controls for unwanted variation in body part ratios, inherent in real human beings both across and within the sexes.

Another advantage of using the BDS is that it is time efficient and easy to administer either in a digital or paper format. A future version of the scale where the images are rotated and presented in three dimensional formats could be developed using the same software. The use of more life-like computer generated stimuli, like the bodies used in the BDS, is also particularly useful as it allows for the presentation of stimuli in more realistic settings, which could not be achieved with line-drawn stimuli. Therefore, the current stimuli is not limited to the use of images simply being presented in isolation. Future research could see the bodies, for example, being presented against various computer generated backgrounds or settings to allow for a more realistic presentation.

Although the current research provides a male version of the scale that is directly comparable with the female version, it has been questioned if bodyweight is a strong predictor of physical attractiveness in males. Some research has suggested that upper body muscularity is a more important indicator of attractiveness (Maisey, Vale, Cornelissen, & Tovée, 1999; Swami & Tovée, 2005; Swami & Tovée, 2008). Therefore, a male version of the scale which varies in the muscularity of the body shape may be useful. Notwithstanding muscularity, BMI does appear to be a significant predictor of male physical attractiveness (Maisey et al., 1999). Males are concerned with their body weight (Pope, Phillips, & Olivardia, 2000), with research suggesting around half wanting to lose weight and half wanting to gain muscle (Drewnowski & Yee, 1987). Therefore, it would seem that body weight is still an important component of perceived body dissatisfaction in males.

In addition, a male version of the scale which

varied in muscularity would not be directly comparable with the female version. The stimuli in the BDS, like the PFRS, can also be used in an experimental setting to measure attractiveness and health preferences for body weight (e.g., Swami & Tovée, 2006). In this way the stimuli can be used to ask participants which body they find most attractive and healthy. In this type of experiment, it would be necessary to have both a male and female version of the scale that both varied in BMI to ensure the results were directly comparable with each other. Although males and females may not be equally concerned about their body weight, when measuring body dissatisfaction in an experimental setting it is extremely useful to have a measure that is identical for males and females. Therefore, although a version of the male scale that varied in muscularity would be useful, the current version of the male scale is necessary.

One limitation of the current research is that the sample was larger for female participants than for male participants, potentially suggesting that the results are more reliable for the female sample. Therefore, findings of the male version should be treated with more caution than the female version. However, the male version of the scale has good face validity and appears to be measuring body dissatisfaction. A-priori power analysis is useful in achieving a reliable sample size on which to judge statistical effects. However, selecting an appropriate sample size and calculating power is complex (see Baguley, 2012; Hoenig & Heisey, 2001). Post-hoc power analyses are particularly problematic because such analyses tend to involve transforming the *p*-values of the effects being explored. This is problematic because it is paradoxical, as it would involve using significant or non-significant *p*-values to confirm that a given effect is (accordingly) significant or non-significant (see Hoenig & Heisey, 2001; Thomas, 1997). Therefore, it was decided not to run and report post-hoc power analyses. The apparent strength of the correlations and the near ceiling performance on the repeated measures 2AFC body detection task are used instead as indicators of sufficient power for both the female and male version. Consequently, this does not mean that the male version should not be used, especially since, as mentioned, there is currently a lack of scales that have both female and male versions.

A further limitation is the use of an opportunity sample, meaning the participants were all students, which is not representative of the population as a whole. As this scale was primarily being developed to be used in a set of experiments with students, it is certainly valid to be used in the context for which it is intended. Further research could aim to validate the scale with a more diverse sample. In addition, it could be argued that using self-reported weight and height to calculate BMI is not as accurate as using the actual weight and height of participants. However, previous research has suggested that self-report measures of weight and height are highly correlated with participants' actual weight and height (Spencer, Appleby, Davey, & Key, 2001), and it is time consuming to collect the actual weight and height of participants. Therefore, using self-report measures is a more time efficient method. Finally, although the stimuli used are more life-like in appearance than previous line drawn stimuli (e.g., Thompson & Gray, 1995), computer generated stimuli may never be as ecologically valid as using real life images. Nonetheless, given the problems with maintaining control and consistency over photographic stimuli, computer generated bodies provide a useful alternative, particularly for researchers wanting to measure body dissatisfaction in an experimental setting.

Future research should aim to develop and validate a version of the BDS so that it can be successfully used with children. Body image measurement with young children can be particularly difficult. As a consequence, researchers often use pictorial scales as other measures can be too complex, placing increased cognitive demands on younger children. However, pictorial scales in this area are limited to line-drawings (e.g., Collins, 1991) which have similar methodological problems to line drawn stimuli used with adults. A version of the BDS that could be used with children would be useful for the assessment of body dissatisfaction in young children. Future research should also aim to further validate the scale and demonstrate its reliability.

In conclusion, the current research suggests that both the male and female version of the BDS show good construct validity, and test-retest reliability is stable over a five-week period. The current scale has improved realism on previous line drawn scales while avoiding the consistency issues associated

with the use of photographic stimuli. In addition, it is convenient and easy to administer, consequently making it a useful tool in the measurement of body dissatisfaction.

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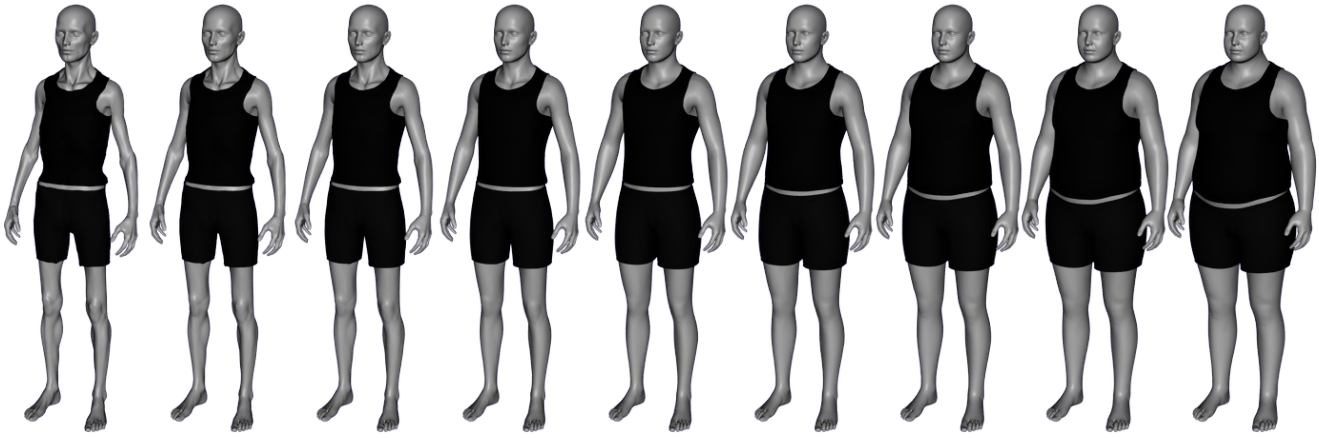
Appendix A

1. Female body stimuli

Body 1 **Body 2** **Body 3** **Body 4** **Body 5** **Body 6** **Body 7** **Body 8** **Body 9**

2. Male body stimuli



Body 1 **Body 2** **Body 3** **Body 4** **Body 5** **Body 6** **Body 7** **Body 8** **Body 9**

Appendix B

Female body measurements

	Height (cm)	Volume	Density (g/cm^2)	Weight (g)	Weight (kg)	Height (meters)	Body Mass Index
1	172.62	39433.94	1.04	41011.30	41.01	1.73	13.76
2	172.62	43104.10	1.04	44828.26	44.83	1.73	15.04
3	172.62	47421.31	1.04	49318.16	49.32	1.73	16.55
4	172.61	52287.90	1.04	54379.42	54.38	1.73	18.25
5	172.61	57364.37	1.04	59658.94	59.66	1.73	20.02
6	172.62	66488.58	1.04	69148.12	69.15	1.73	23.21
7	172.63	76290.74	1.04	79342.37	79.34	1.73	26.62
8	172.64	86402.47	1.04	89858.57	89.96	1.73	30.15
9	172.65	98237.68	1.04	102167.2	102.17	1.73	34.27

Male body measurements

	Height (cm)	Volume	Density (g/cm^2)	Weight (g)	Weight (kg)	Height (meters)	Body Mass Index
1	172.62	40862.48	1.06	43314.23	43.31	1.73	14.54
2	172.62	44786.76	1.06	47473.97	47.47	1.73	15.93
3	172.62	49155.39	1.06	52104.71	52.10	1.73	17.49
4	172.61	53826.42	1.06	57056.01	57.06	1.73	19.15
5	172.61	58956.77	1.06	62494.18	62.49	1.73	20.97
6	172.62	68373.29	1.06	72475.69	72.48	1.73	24.32
7	172.62	78023.91	1.06	82705.34	82.71	1.73	27.75
8	172.64	88868.72	1.06	94200.84	94.2	1.73	31.61
9	172.65	101008.70	1.06	107069.20	107.07	1.73	35.92

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