The New School Psychology Bulletin
2016, Vol. 13, No. 2

Print 2016 ISSN: 1931-793X; Online ISSN: 1931-7948

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.

Acknowledgement: This project would not have been possible without the hard work and support of the directors and lab members of The Center for Attachment Research at The New School. Special thanks to Jordan Bate, Hannah Knafo, Tiffany Haick, Sophia Hoffman, Jessica Retan, Howard Steele, Miriam Steele, Victoria Sliva, and Kristin Tosi.
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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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