Implicit internalization of the thin ideal as a predictor of increases in weight, body dissatisfaction, and disordered eating

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ARTICLE INFO

ABSTRACT

The freshman year of college has been identified as a time when some students experience large changes in their eating behaviors, body image, and weight. One factor that is predictive of changes in these variables is internalization of the thin ideal (i.e., the degree to which an individual has accepted societal values of thinness and applies these values to herself). However, given the limitation of self-report and previous research demonstrating the additional predictive validity implicit measurement provides, it may be important to develop an implicit paradigm for assessing internalization of the thin ideal. The Implicit Association Test is the most common implicit measurement technique. However this test is associational in nature, which reflects only one aspect of human cognition. The current study evaluates a newly-created implicit measure of internalization of the thin ideal that utilizes the Implicit Relational Assessment Procedure (IRAP). In particular, the study investigates concurrent and prospective associations between internalization of the thin ideal and disordered eating, body image dissatisfaction, and weight in a group of women at the beginning and end of their freshman year in college. Results of the study indicate that weight, disordered eating and body image dissatisfaction increased during the freshman year, and that these were predicted by implicit internalization of the thin ideal at the beginning of the year. Moreover, the new implicit measure was predictive above and beyond any predictive ability of the explicit measure. Results indicate that the thin ideal IRAP can successfully predict changes in many variables of interest at the freshman year of college, and suggest it may be a beneficial screening tool to assess at-risk freshman. This study also highlights the need for additional implicit measures in the realm of body image and disordered eating.

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1. Introduction

Previous research has demonstrated that caloric intake increases and physical activity decreases dramatically during the freshman year of college, and this in turn causes increases in weight (about 3–6 lbs), body image dissatisfaction, and levels of disordered eating (Anderson, Shapiro, & Lundgren, 2003; Butler, Black, Blue, & Gretebeck, 2004; Timko, Mooney, & Juarascio, 2010). Longitudinal studies have indicated that weight (Anderson et al., 2003; Butler et al., 2004; Cooley & Toray, 2001a,b; Hoffman, Policastro, & Lee, 2006; Lowe et al., 2006; Pliner & Saunders, 2008), body image dissatisfaction (Delinsky & Wilson, 2008; Vohs, Heatherton, & Herrin, 2001), and disordered eating behavior (Cooley & Toray, 2001a,b; Striegel-Moore, Silberstein, Frensch, & Rodin, 1989; Vohs et al., 2001) all increase during the freshman year of college.

One variable that has consistently predicted increases in disordered eating and body image dissatisfaction is internalization of the thin ideal (ITI). Internalization implies that the individual is not only aware of the thin ideal, but has "bought into" it, and now is willing to modify her behaviors to meet these societal standards (Thompson & Stice, 2001). Although some degree of ITI might be healthy, problematic ITI often occurs among those who perceive themselves to weigh too much, but who are in the healthy weight range. Several longitudinal studies have suggested that ITI is predictive of body image dissatisfaction (Gross, 2003; Johnson, 2006; Stice & Whitenton, 2002; Zody, 2005), bulimia nervosa (Joiner, Heatherton, & Keel, 1997; Stice & Agras, 1998) and increases in dieting among normal weight women (Cattarin & Thompson, 1994; Stice, Mazotti, Weibel, & Agras, 2000; Stice, 2001). In contrast, the relationship between ITI and weight change is not well understood. Internalization might predict unhealthy weight loss in some, but unhealthy weight *gain* in others.

When measured by self-report, ITI is a robust predictor of body dissatisfaction and disordered eating. However, explicit measurement of attitudes and beliefs is subject to many potential problems, including presentational strategies to preserve self image (Greenwald, McGhee,

& Schwartz, 1998), particularly when individuals are asked to provide information about sensitive topics such as eating behaviors or body dissatisfaction. Implicit assessment, on the other hand, uses involuntary behavior (e.g., latency of response in tasks requiring rapid responding) not subject to self-presentation (Vartanian, Polivy, & Herman, 2004) to measure attitudes about which respondents might be unaware, but that could still be affecting their behavior (Greenwald & Banaji, 1995). In the case of ITI, the implicit and explicit assessment procedures may measure slightly different aspects of a network of beliefs. For example, explicitly-measured beliefs may include "I shouldn't be judgmental about body size" whereas implicitly-measured beliefs could include more basic thoughts like "I want to be thin." Given that recent research into the nature of implicit and explicit measurement has demonstrated that they are predictive of different types of behavior (Wilson, Lindsey, & Schooler, 2000), measuring both may afford a better understanding of how they independently and synergistically predict behavior.

The role of implicitly-measured beliefs in the prediction of eating behaviors, body image, and disordered eating is a relatively new research area, but findings already suggest that future research in this area may be fruitful. Implicit assessment procedures have been used to assess fat biases (Teachman & Brownell, 2000), desire to eat certain foods (Hoefling & Strack, 2008; Vartanian et al., 2004, 2005; Vartanian, Herman, & Polivy, 2005), quantity eaten in mock taste tests (Friese, Hofmann, & WÃ¤nke, 2008), body image dissatisfaction (Ahern, Bennett, & Hetherington, 2008; Ahern & Hetherington, 2006) and weight loss (Craeynest, Crombez, Koster, Haerens, & De Bourdeaudhuij, 2008). The results often demonstrate that implicit versus explicit assessment of the same constructs result in different predictions, thereby suggesting that both types of procedures may be complementary tools when assessing eating behaviors. To date, however, there have been no attempts to use implicit measure of ITI to prospectively predict changes in eating behaviors, body image, weight, and disordered eating.

The freshman year of college could be an ideal time to investigate the predictive utility of an implicit measurement of ITI given the large literature base demonstrating that eating behaviors and weight change substantially during this year. If cognitive networks reflecting ITI are indeed present, these might be "activated" by the new food environment as well as the competitive and "thin" conscious nature of college campuses (French & Jeffery, 1994). Additionally, the onset of college typically coincides with an increase in individuals' regulation of their own eating and activity levels.

The Implicit Associations Test (IAT; Greenwald, McGhee, & Schwartz, 1998) is the most commonly used measure of implicit attitudes. However, a number of significant weaknesses of the IAT have been identified (Fiedler, Messner, & Bluemke, 2006). One concern is that the IAT is primarily an associational test, and therefore cannot assess the *directionality* or the *relations* between concepts (Hayes, 2001). The Implicit Relational Assessment Procedure (IRAP) is an implicit measurement paradigm similar to the IAT in that respondents are required to respond quickly and accurately in ways that are either consistent or inconsistent with their beliefs (Barnes-Holmes et al., 2006). However, rather than simply measuring the associations between two stimuli, the IRAP incorporates an additional relational component in order to clarify the nature and direction of the association. For example, an IAT designed to implicitly measure ideal body size might ask participants to match positive or negative words with images of fat and thin women. An IRAP might instead use target phrases such as "I want to look like "or "I don't want to look like" and have these phrases paired with images of fat and thin women. Participants should respond more rapidly on trials that reflect more basic, well established relational framing (i.e., so-called "automatic" responses) and will have longer response latencies on tasks that require responding in a way that is inconsistent with their relational frames (i.e., one that requires deliberative responses), or that is not part of their relational network.

Previous research using the IRAP has demonstrated that it can effectively measure implicit beliefs (Barnes-Holmes, Barnes-Holmes,

Stewart, & Boles, 2010). Most relevant to this present study, Timko et al., (2010a,b); Timko, England, Herbert, and Forman (2010a) used the IRAP to successfully assess body image dissatisfaction implicitly. One seeming limitation of the study was the use of verbal cues ("I am not… thin/fat word") rather than images of bodies, given that images may tap into body image more saliently. Juarascio, Timko, Forman, and Herbert (2010) created and validated an image-based thin ideal IRAP in part by demonstrating that it was associated with explicit measures of ITI and with several disordered eating subscales. However, the cross-sectional design of that study precluded any causal conclusions.

The current study sought to test the ability of Juarascio et al.'s thin ideal IRAP to prospectively predict changes during the freshman year of college. It was hypothesized that the IRAP would predict changes in weight, body image dissatisfaction, and eating behaviors over the course of the academic year, with high internalization predicting weight loss and increases in body image dissatisfaction, and disordered eating. It was also hypothesized that implicitly-measured ITI would be a stronger predictor of change in weight, body image dissatisfaction, and disordered eating than explicitly-measured internalization, and would predict changes in the variables of interest above and beyond any changes predicted by explicit measures.

2. Methods

2.1. Participants

The current study examined normal weight (i.e., BMI 18–25 kg/m^2) freshman women ($n = 80$) recruited from undergraduate courses at a large urban university, ages 18–25 years. Students were not allowed to participate if they were unable to see or read words from a computer screen, currently pregnant, or currently receiving treatment for an eating disorder. All recruitments took place during the first month of college so that baseline measurement would occur as closely as possible to the start of the school year. Follow-up assessments occurred between late April and late May, and the average time lapse between baseline and post scores was 7.8 months.

2.2. Measures

Body image dissatisfaction was measured by the Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987), a 34-item measure designed to assess an individual's level of satisfaction or dissatisfaction with the shape of her body. The measure has acceptable validity and reliability ($\alpha = 0.95$ in current sample, 0.97 in Evans & Dolan, 1993).

Disordered eating behavior was assessed with the 26-item Eating Attitudes Test (EAT-26; Garner, Olmstead, & Polivy, 1983). The EAT-26 has three subscales: Unhealthy Dieting, Bulimia Nervosa and Food Preoccupation, and Oral Control. Adequate reliability has been demonstrated in the current ($\alpha = .83$) and previous samples (e.g., $\alpha = 0.83$; Aruguete, Yates, Edman, & Sanders, 2007).

Internalization of the thin ideal was measured explicitly via the Sociocultural Attitudes Towards Appearance Scale (SATAQ-3; Thompson, van den Berg , Roehrig, Guarda, & Heinberg, 2004). The SATAQ-3, which has adequate reliability (current sample $\alpha = 0.72$), has four subscales: Internalization-General (general influence of the media on perceived body size ideals); Internalization-Athlete (internalization of athletic ideals and sports figures in the media); Pressure (media pressure to achieve certain body size ideals); and Information (degree to which media is used as a source of information for determining body size ideal).

The Implicit Relational Assessment Procedure (IRAP) is an implicit assessment tool. The targets used in this study were images of six "fat" and six "thin" women that were derived from the Body Morph Assessment procedure (Stewart, 2003) and that were previously rated in terms of desirability by a separate sample ($n = 50$) of freshman