Expectations of Obese Trainees: How Stigmatized Trainee Characteristics Influence Training Effectiveness

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This study identifies stigma as a potential precursor to self-fulfilling prophecies in training interactions. Expectations held by leaders often result in actions that elicit expectancy-confirming behaviors from their subordinates. The results of the present study suggest that trainee weight (manipulated with a photograph depicting the trainee as either obese or average weight for height) influenced female trainer expectations and evaluations of the training and trainee. Furthermore, the results suggest that negative expectations held by trainers were related to trainee evaluations of the training and the trainer and, for less flexible trainers, to decrements in trainee performance on the trained task. Overall, the results suggest that trainer expectations can be influenced by stereotypes held about trainee characteristics, thus undermining training effectiveness.

Keywords: training, obesity, trainee characteristics, expectancy effects, stigma

Organizations use training programs, at great financial costs, to provide employees with new information and skills necessary to perform their jobs (Quiñones, 1997; Towler & Dipboye, 2001). Consequently, organizational psychologists have considered features that characterize effective training programs, such as the design of the training, the transfer environment, and characteristics of the trainee (for a review, see Salas & Cannon-Bowers, 2001). However, there is a dearth of research examining how trainer characteristics might influence these antecedent factors and ultimately influence trainee task performance (Towler & Dipboye, 2001). In particular, a trainer's negative stereotypes and expectations of diverse trainees within training sessions may influence training effectiveness. The purported goal of a training program is

to provide all employees with the knowledge and skills necessary to perform a task (Quiñones, 1997). Nevertheless, rather than "leveling the playing field" for all employees through training, if trainer stereotypes result in lower quality training, organizations may be unknowingly withholding skills and resources from stigmatized employees that are necessary to accomplish tasks effectively. Thus, the present study draws from extensive research on the self-fulfilling prophecy to address a deficiency in the existing training literature on the consequences of negative expectations of diverse trainees.

Self-Fulfilling Prophecies

The *self-fulfilling prophecy* is a phenomenon by which an individual's expectations can lead to behaviors that cause the expectation to come true, thus objectively confirming the perceiver's original expectations (e.g., Jussim, 1986; Rosenthal & Jacobson, 1992). This process has been studied in a number of contexts, including classrooms, social interactions, and organizations, and is generally considered to have three parts (for reviews, see Darley & Fazio, 1980; Jussim, 1986; Miller & Turnbull, 1986; Neuberg, 1996; Rosenthal & Rubin, 1978). In the first part of this process, expectations are formed and either maintained or changed depending on confirmatory biases, the flexibility or rigidity of the expectations, and the strength of the disconfirming evidence (Jussim, 1986). In the second part, the target receives differential treatment based on the expectations. For example, when teachers have high expectations of their students, they tend to create warmer social environments and direct more attention, emotional support, encouragement, or awards toward these students (e.g., Harris & Rosenthal, 1985; Rosenthal, 1973). Furthermore, there is evidence that when instructors or leaders have high expectations of their students, they actually teach more, ask harder questions, and allot

more time and opportunity to respond (e.g., Rosenthal, 1973; Snyder & Swann, 1978). The third part constitutes the reactions of the targets to the differential treatment. For a self-fulfilling prophecy to occur, targets must (consciously or unconsciously) follow the script initiated by the leader (Neuberg, 1994, 1996; Smith, Neuberg, Judice, & Biesanz, 1997).

Models of self-fulfilling prophecy effects in the workplace (e.g., Eden, 1990a) are similar to those developed in the education literature: Expectations influence manager, leader, or trainer behavior and treatment of subordinates, which in turn lead to subordinate self-expectancy and increased (or decreased) subordinate motivation and effort. Ultimately, the change in effort leads to increased (or decreased) subordinate performance (e.g., Eden & Shani, 1982).

Stigma and the Self-Fulfilling Prophecy

Stigmatized individuals, or those who bear a mark that indicates a devalued identity (e.g., individuals who are disabled, ethnic minorities, obese; Goffman, 1963), are often targets of negative stereotypes (Crocker, Major, & Steele, 1998). Despite the inherent association between stereotypes and expectations, the role of stigma in leading to self-fulfilling prophecies has received limited research attention (Jussim, Palumbo, Chatman, Madon, & Smith, 2000; for exceptions, see Snyder, Tanke, & Berscheid, 1977; Word, Zanna, & Cooper, 1974). Educational research has provided evidence of lowered expectations and differential treatment because of race (e.g., Rubovits & Maehr, 1973) and socioeconomic status (e.g., Rist, 1970). However, this research tends to be quasi-experimental, making it difficult to isolate the role of stigma in generating the negative expectations and subsequent self-fulfilling prophecies. Thus, the aim of the present research was to add to the training and stigma literature by examining self-fulfilling prophecies elicited by stigma in training interactions. In this study, we focused on a stigmatized characteristic that plagues over half of America's adults: obesity.

The Stigma of Obesity

Research indicates that obese individuals are viewed as social deviants and are blamed for their condition (e.g., Crandall, 1994; DeJong, 1993; Rothblum, 1992; Weiner, Perry, & Magnusson, 1988). In comparison to average-weight individuals, obese individuals tend to be stereotyped as less hard working, less strong, less self-restrained, and less stable (e.g., Hebl, 1997), as well as slower, sloppier, and lazier (Ryckman, Robbins, Kaczor, & Gold, 1989). In organizations, obese individuals face discrimination in many domains (Roehling, 1999). Obese individuals are regarded as less desirable employees and are classified as having lower competency, productivity, and industriousness (Larkin & Pines, 1979). In studies in which weight is experimentally manipulated, compared with average-weight individuals, obese individuals are less likely to be hired (Pingitore, Dugoni, Tindale, & Spring, 1994), more likely to be assigned to the least desirable sales territories (Bellizzi & Hasty, 1998; Bellizzi, Klassen, & Belonax, 1989), less likely to receive promotions (Rothblum, Brand, Miller, & Oetjen, 1990), and more likely to receive poor customer service (King, Shapiro, Hebl, Singletary, & Turner, 2006). Thus, we anticipated that negative stereotypes of stigmatized trainees, in particular obese trainees, would negatively influence trainer expectations and ultimately influence training effectiveness.

Gender and the Self-Fulfilling Prophecy

Because of its focus on the stigma of obesity in training interactions, the present study offers a unique situation to assess gender differences in self-fulfilling prophecies. Most expectancy studies conducted in the classroom do not yield systematic gender differences (Hall & Briton, 1993). In contrast, organizational research primarily identifies expectancy effects as occurring within male leaders (e.g., Dvir, Eden, & Banjo, 1995; McNatt, 2000; Sutton & Woodman, 1989). However, a limited number of studies (e.g., Davidson & Eden, 2000) and recent meta-analyses (Kierein & Gold, 2000; McNatt, 2000) suggest that, although it is less common, female leaders may induce self-fulfilling prophecies in organizational interactions. However, the targets in the present study—obese females—belong to a group that may face the most negative expectations from a female trainer.

In general, some research has suggested that women may be more critical of obesity than are men. Only a few studies have assessed gender differences in the tendency to discriminate against overweight individuals. Although the evidence is mixed, research has suggested that women are often more likely to evaluate the overweight as less desirable (e.g., Decker, 1987). More specifically, Pingitore et al. (1994) found that women who were highly satisfied with their body weight and who considered body awareness as central to their self-concept responded with the most negativity toward overweight job applicants. This is not surprising given that research has suggested that women may be more critical of other women in general than are men (e.g., Graves & Powell, 1995; Mathison, 1986; Staines, Tavris, & Jayaratne, 1974). King, Hebl, and Kazama (2005) suggested that this may be the case especially in organizational contexts in which women tend to occupy lower status positions and often compete for status and recognition. For example, compared with men, women tend to hold other women to higher standards of competence for hiring decisions (Biernat & Fuegen, 2001; Graves & Powell, 1995), be more concerned with other women's qualifications (Heilman & Herlihy, 1984), be more biased in selection decisions (Brown & Geis, 1984), and be more critical of assertive female employees (Mathison, 1986). Furthermore, it may be the case that average-weight women are particularly likely to stigmatize obese women. Kerr, Hymes, Anderson, and Weathers (1995) suggested that members of marginalized groups are most likely to reject deviant members of their group in an effort to distance themselves from that identity. Taken together, previous research has suggested that, in some contexts, female trainers may be more likely than male trainers to derogate other female trainees.

The Present Investigation

The stereotypes that are commonly associated with obesity likely give rise to negative ability and effort-based expectations across work contexts. Consequently, we hypothesized the following:

Hypothesis 1a: Compared with trainers of average-weight trainees, trainers of obese trainees will have lower expecta-

tions of the training and lower expectations of the trainee's desire to excel in the training and succeed in the trained task.

Given that women are likely to reject obese women (e.g., Decker, 1987), we expected the following:

Hypothesis 1b: This effect will be moderated by trainer gender such that the predicted expectancy effect will be strongest among female trainers.

According to self-fulfilling prophecy theory and research, and consistent with extant stereotypes of obese individuals, we anticipated that trainer negative expectations of obese trainee ability and motivation will lead to lower quality training:

Hypothesis 2a: Compared with trainers of average-weight trainees, trainers of obese trainees will evaluate the training and trainee more negatively.

Hypothesis 2b: Trainer evaluations will be moderated by trainer gender such that the predicted effect will be strongest among female trainers.

Hypothesis 3a: Compared with trainees in the average-weight condition, trainees in the obese condition will evaluate the training and the trainer more negatively.

Hypothesis 3b: Trainee evaluations will be moderated by trainer gender such that the predicted effect will be strongest among trainees trained by female trainers.

If obese trainees are subject to a lower quality training on the basis of trainer expectations, such training outcomes as poorer knowledge and skill acquisition may ultimately lead stigmatized trainees to fulfill trainer expectations. Therefore, we expected the following:

Hypothesis 4a: Trainees in the obese condition will perform more poorly on the trained task than trainees in the average-weight condition.

Hypothesis 4b: Trainee score on the trained task will be moderated by trainer gender such that performance deficits in the trained task will be strongest among trainees trained by female trainers.

Method

Participants

Ninety undergraduate students participated in exchange for course credit. Forty-five women[1] (M_{age} = 19.44, SD = 1.22) played the role of trainee and 45 students (19 women, 26 men) played the role of the trainer (M_{age} = 19.24, SD = 1.14). The unit of analysis was each trainer–trainee pair, resulting in a sample size of 45.[2]

Materials

Manipulated photographs. Each trainer was presented with a digital photograph ostensibly depicting the trainee (see Figure 1). The photographs were created using a Size 8 model (average weight for her height) seated on a couch. To avoid biases toward any idiosyncrasy, we took two

Figure 1. Sample of manipulated photographs used to portray the trainee as obese or average weight for height.

photos of three separate confederate models.[3] In one photograph, each confederate model posed as her natural size. In the second photograph, each confederate model posed wearing a professionally constructed obesity prosthesis underneath her clothing, generating a Size 22 figure. In both photos, the confederate model wore the same style clothing (different sizes). To minimize any unnatural appearance as a result of wearing an obesity prosthesis, we selected only models with round faces who looked natural in the prosthesis. In addition, all models wore a turtleneck to conceal their neck and a pantsuit concealing their arms and legs. Thus, one of six photos was randomly assigned to each trainer.[4]

Experimental task. The training task was a computer Naval Air Defense simulation in which participants command the actions of a U.S. Naval carrier (see Holladay & Quiñones, 2003; Hollenbeck et al., 1997; Quiñones, 1995). Participants had 1 min to evaluate the threat of oncoming

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[1] Research consistently has shown that women are judged and stigmatized on the basis of weight and appearance more than are men (e.g., Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998; Jackson, 1992; Puhl & Brownell, 2001; Roehling, 1999); thus, we decided to focus our investigation on female targets only.

[2] One participant in the role of the trainer accessed the properties screen of the digital photograph, which indicated that the photograph had been taken months prior to the actual experiment date. As a result, the participant commented that the photograph could not actually be of the individual with whom he was interacting. Because the participant was able to gain this information regarding the photo, the data from that trainer–trainee pair were excluded from the data set and all analyses.

[3] The confederate model did not interact with any of the dependent variables (all Fs < 1), and thus all analyses collapse over confederate.

[4] The stimuli used in the present study were identical to those used in a previously published study examining the stigma of obesity. Thus, all pretest procedures and results can be found in the original publication (Hebl & Mannix, 2003). In addition, a manipulation check was conducted at the end of the training interaction in the present study to verify that trainers perceived a weight difference between the two sizes depicted in the photographs. Participant trainers evaluated the weight of the individual depicted in the photograph on a scale ranging from 1 (*well below average weight*) to 7 (*well above average weight/obese*) with a midpoint of 4 (*average*). There was a main effect of weight such that participant trainers in the obese trainee picture condition evaluated the weight of the trainee to be higher (M = 4.96, SD = 0.98) than trainers in the average-weight picture condition (M = 4.29, SD = 0.64), $F(1, 42)$ = 7.10, p = .01, η^2 = .15.

targets and decide on an appropriate action (ignore, monitor, warn, ready, or defend). The participant's score is based on the distance between the participant's decision and the correct defense decision, resulting in five possible outcomes for each trial: hit (2 points), near miss (1 point), miss (0 points), incident (–1 point), and disaster (–2 points). After each of the 40 trials, the participants received a score and accuracy feedback (including the correct decision).

Procedure

Participants were recruited in groups of two to arrive at staggered times. Participants were led to believe that the study concerned distance learning. Participants learned that they would be assigned to the role of trainer or trainee and that they would engage in a computer-mediated training interaction with a partner who was in a different state (in reality, both participants were in the same lab space). Thus, trainers and trainees never actually saw one another. To lend credence to the photo manipulation, experimenters took a digital photograph of each participant.

The first participant to arrive was assigned to the role of trainer. During the hour before the second participant arrived, trainers read the task instruction manual and completed a practice and scored version of the task. Next, the experimenter opened a digital photograph of an obese or average-weight woman on the trainer's computer that purportedly depicted the trainee. Before the training interaction began, the trainer completed a measure of training and trainee expectancy.

Roughly an hour after the trainer arrived, a second participant arrived and was assigned to the role of the trainee. The trainee had no knowledge of the photograph manipulation and had no reason to believe the trainer might hold negative expectations regarding the trainee or training. The experimenters instructed both the trainer and the trainee to put on a combination headphone–microphone headset, and the experimenters enabled the communication software.

Because we were interested in how expectations might mold the quality and the content of a training interaction, the content of the training was not regulated—trainers were given total control of the interaction. During the training interaction, the trainers had access to (but were not required to use) the training manual and a three-item practice version of the task that remained open on the trainee's computer. Trainers were instructed to terminate the training sessions when they felt the trainee was instructed to "the best of his or her ability." Following the interaction, contact between the trainer and trainee was terminated. Trainees completed a scored version of the trained task. Trainers were not given any information regarding the trainee's performance. Both participants completed an evaluation of the training and of their interaction partner.

Measures

Unless otherwise noted, the factor structure for each set of items was determined using Cattell's (1966) scree test method. Factor loadings were determined using a principal axis factor analysis (with Promax rotation if more than one factor emerged).

Trainer expectancy variables. After viewing the image of the trainee and prior to the training interaction, the trainer completed a 12-item expectancy questionnaire. Two items assessed expected training success ("I expect to be satisfied with the interaction" and "I expect the training to be successful"). Ten questions assessed the trainer's expectations of the trainee. Because these sets of questions were expected to be theoretically distinct, the 2 items regarding the training were combined to form Expected Training Success (α = .78). A two-factor structure emerged for the 10 trainee expectancy items (Expected Trainee Work Ethic and Expected Trainee Success; see Table 1).

Trainer postinteraction variables. Immediately following the training interaction, the trainer evaluated the training interaction on an 11-item questionnaire. Two items were included to bolster the cover story and were not included in the analyses ("How flexible was instruction using a computer?" and "How easy was it to communicate using a computer?"). A one-factor structure was used on the remaining 9 items (Trainer Evaluation of Training; see Table 2). In addition, the trainer evaluated the trainee on the 10 qualities originally presented in the expectancy questionnaire, generating a one-factor structure (Trainer Evaluation of the Trainee; see Table 3).

Trainee postinteraction variables. Following the completion of the task, the trainee responded to an 11-item evaluation of the training. The first 2 items were the same cover-story enhancers given to the trainer and were not included in the analyses. A one-factor structure was used on the remaining 9 items (Trainee Evaluation of Training; see Table 4). In addition, the trainee evaluated the trainer on 10 items, resulting in one factor (Trainee Evaluation of Trainer; see Table 5).

Trainee performance. Trainees performed 40 trials of the trained task. To avoid a practice effect that could confound the information taught during training (the task provided feedback after each trial), we averaged the trainee's first 10 trials to represent her score (Trainee Performance).

Results

Unless otherwise noted, analyses are univariate analyses of variance on a 2 (trainee weight: obese, average) $\times$ 2 (trainer gender: male, female) between-participants design. Participant race did not interact with any dependent variable (all Fs < 1), thus analyses collapse across race.

Hypothesis 1: Pretraining Expectations

Trainers completed a practice and scored version of the experimental task immediately before reporting their expectations of the training and the trainee. Thus, because the trainer's performance likely influenced subsequent training and trainer expectations, we used the trainer's performance as a covariate in the analyses of all trainer expectations.

Expected training success. Supporting Hypothesis 1a, a main effect of trainee weight emerged on expected training success such

Table 1
Factor Loadings for the Trainer Expectancy Questionnaire

	Loading	
Item	Factor 1	Factor 2
Expected trainee work ethic[a]		
I expect the trainee . . .		
will be unmotivated. (R)	.98	−.27
will put forth effort.	.83	−.02
will not pay attention. (R)	.71	−.06
will be a disciplined learner.	.67	.19
will be highly motivated.	.64	.11
will be intelligent.	.57	.26
will listen well.	.55	.20
Expected trainee success[b]		
will have success in the task.	.02	.90
will learn quickly.	−.17	.76
will not succeed in the task. (R)	.13	.75

Note. All questions were assessed on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). R = item was reverse scored.
[a] Eigenvalue = 5.37, % variance = 53.74, α = .89.   [b] Eigenvalue = 1.38, % variance = 13.76, α = .84.

Table 2

Factor Loadings for the Trainer Posttraining Evaluation of the Training

Item	Loading
How successful do you feel the training was at preparing the trainee for the task?	.94
How effective was the training?	.92
How successful would you expect the trainee to be in the future application of this knowledge?	.89
How successful were you as a trainer?	.88
How satisfied were you with the training?	.87
How useful was the training?	.83
How satisfied were you with the pace of the training?	.77
How enjoyable was the training?	.73
How related was the content of the training to the task?	.50

Note. Trainer evaluation of training. All questions were assessed on a 7-point Likert-type scale ranging from 1 (*not very*) to 7 (*extremely*). Eigenvalue = 6.40, % variance = 71.15, α = .95.

that trainers in the obese condition had lower training expectations ($M = 4.00$, $SD = 1.30$) than trainers in the average-weight condition ($M = 4.74$, $SD = 0.70$), $F(1, 37) = 4.69$, $p = .04$, $\eta^2 = .11$. No main effect or interaction with trainer gender emerged (all $Fs < 1$).

Expected trainee success. Similarly, and consistent with Hypothesis 1a, a main effect of trainee weight emerged on expected trainee success, $F(1, 37) = 5.11$, $p = .03$, $\eta^2 = .12$. There was no effect of trainer gender ($F < 1$). However, supporting Hypothesis 1b, the main effect of trainee weight was qualified by a Trainer Gender × Trainee Weight interaction, $F(1, 37) = 7.62$, $p = .01$, $\eta^2 = .17$: Female trainers expected less success from obese ($M = 4.31$, $SD = .84$) than from average-weight trainees ($M = 5.40$, $SD = 0.58$), $F(1, 38) = 10.08$, $p = .003$, $\eta^2 = .21$, whereas male trainer expectations of obese and average-weight trainee success did not differ ($F < 1$).

Expected trainee work ethic. Also consistent with Hypothesis 1a, a main effect of trainee weight emerged on expected trainee work ethic, $F(1, 37) = 4.01$, $p = .05$, $\eta^2 = .10$. The effect of trainer gender was not significant, $F(1, 37) = 2.96$, $p = .09$, $\eta^2 =$

Table 3

Factor Loadings for the Trainer Posttraining Evaluation of the Trainee

Item	Loading
The trainee . . .	
put forth effort.	.94
was intelligent.	.92
was a disciplined learner.	.88
learned quickly.	.86
listened well.	.85
was highly motivated.	.85
is unmotivated. (R)	.85
will have success in the task.	.81
will not succeed in task. (R)	.70
did not pay attention. (R)	.68

Note. Trainer evaluation of trainee. All questions were assessed on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). R = item was reverse scored. Eigenvalue = 7.26, % variance = 72.62, α = .96.

Table 4

Factor Loadings for the Trainee Posttraining Evaluation of the Training

Item	Loading
How effective was the training you received?	.90
How clear was the training you received?	.81
How satisfied were you with the training you received?	.80
How successful was the training at preparing you for the task?	.80
How related was the content of the training to the task you performed?	.61
How enjoyable was the training you received?	.59
How useful was the training you received?	.57
How successful would you expect to be in the future application of this knowledge?	.56
How satisfied were you with the pace of the training you received?	.55

Note. Trainee evaluation of training. All questions were assessed on a 7-point Likert-type scale ranging from 1 (*not very*) to 7 (*extremely*). Eigenvalue = 4.86, % variance = 53.97, α = .89.

.07. However, consistent with Hypothesis 1b, these effects were qualified by a Trainer Gender × Trainee Weight interaction, $F(1, 37) = 4.35$, $p = .04$, $\eta^2 = .01$. Female trainers expected a poorer work ethic from obese ($M = 4.81$, $SD = 0.71$) than from average-weight trainees ($M = 5.72$, $SD = 0.73$), $F(1, 38) = 4.90$, $p = .03$, $\eta^2 = .11$. In contrast, male trainers showed no expectation bias ($F < 1$).

In sum, Hypothesis 1a was supported: In contrast to the average-weight condition, trainers led to believe their trainee was obese expected less training success, less trainee success, and lower trainee work ethic. In addition, supporting Hypothesis 1b, only female trainers expected less trainee success and a lower trainee work ethic from trainees depicted as obese.

Hypothesis 2: Trainer Posttraining Evaluations

Evaluation of the training. In support of Hypothesis 2a, a significant effect of trainee weight (but not trainer gender; $F < 1$) emerged on the trainer evaluation of the training composite, $F(1,$

Table 5

Factor Loadings for the Trainee Posttraining Evaluation of the Trainer

Item	Loading
The trainer…	
was motivating.	.88
was responsive.	.82
was encouraging.	.81
put forth effort.	.80
was understanding.	.68
was patient.	.63
rushed the interaction. (R)	.63
communicated well.	.59
was thorough.	.56
was hostile. (R)	.52

Note. Trainee evaluation of trainer. All questions were assessed on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). R = item was reverse scored. Eigenvalue = 5.38, % variance = 53.82, α = .90.

$40) = 4.40$, $p = .04$, $\eta^2 = .10$. For the Trainer Gender $\times$ Trainee Weight interaction, although not statistically significant—$F(1, 40) = 2.83$, $p = .10$, $\eta^2 = .07$—the means were in the hypothesized direction. Supporting Hypothesis 2b, female trainers evaluated the training more negatively when the trainee was obese ($M = 4.10$, $SD = 1.24$) rather than average weight ($M = 5.59$, $SD = 0.75$), $F(1, 41) = 7.35$, $p = .01$, $\eta^2 = .15$. In contrast, male trainer evaluations exhibited no such bias ($F < 1$).

Evaluation of trainee.   There were no main effects of trainer gender or trainee weight for trainer evaluation of the trainee ($F < 1$). However, in support of Hypothesis 2b, there was a significant Trainer Gender $\times$ Trainee Weight interaction, $F(1, 40) = 7.10$, $p = .01$, $\eta^2 = .15$ (see Figure 2): Female trainers evaluated their obese trainees more negatively ($M = 5.02$, $SD = 1.34$) than their average-weight trainees ($M = 6.45$, $SD = 0.42$), $F(1, 41) = 6.04$, $p = .02$, $\eta^2 = .13$; in contrast, male trainers did not exhibit this bias, $F(1, 41) = 1.49$, $p = .23$, $\eta^2 = .04$.

In sum, Hypothesis 2a was partially supported: Trainers evaluated the training more negatively when the trainee was obese. Similarly, Hypothesis 2b was supported: Only female trainers evaluated the training and trainee more negatively when in the obese condition.

Hypothesis 3: Trainee Posttraining Evaluations

Evaluations of training.   A trend in the hypothesized direction emerged for the main effect of trainee weight on trainee evaluations of training but did not reach conventional levels of significance, $F(1, 40) = 2.14$, $p = .15$, $\eta^2 = .05$. No main effect of trainer gender was found ($F < 1$). Although not statistically significant—$F(1, 40) = 3.45$, $p = .07$, $\eta^2 = .08$—the means on the Trainer Gender $\times$ Trainee Weight interaction were in the hypothesized direction. Obese trainees trained by women evaluated the training more negatively ($M = 4.44$, $SD = 1.29$) than did average-weight trainees trained by women ($M = 5.44$, $SD = 0.76$), $F(1, 41) = 5.38$, $p = .03$, $\eta^2 = .12$. Ostensive weight of trainees did not, however, influence trainee evaluations of the training when their trainers were men ($F < 1$).

Evaluations of trainer.   A trend emerged in the hypothesized direction for the main effect of trainee weight (but not trainer gender; $F < 1$) on evaluations of the trainer; however, this did not
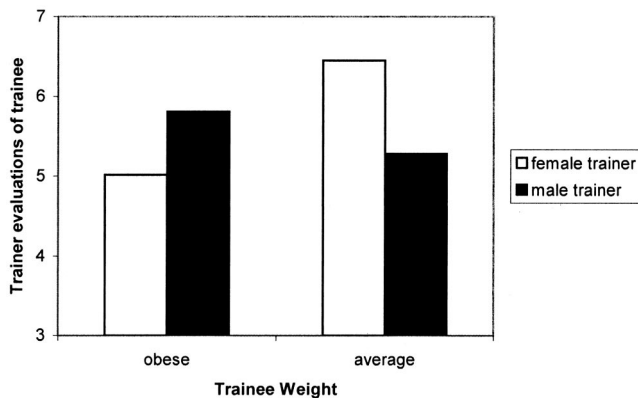
reach conventional levels of significance, $F(1, 40) = 2.85$, $p = .10$, $\eta^2 = .07$. This was qualified by a Trainer Gender $\times$ Trainee Weight interaction, $F(1, 40) = 7.31$, $p = .01$, $\eta^2 = .16$ (see Figure 3). Average-weight trainees reported more positive evaluations ($M = 6.33$, $SD = 0.88$) than did obese trainees when their trainers were women ($M = 5.17$, $SD = 1.01$), $F(1, 41) = 8.92$, $p = .01$, $\eta^2 = .18$. Trainee weight did not influence the evaluations of male trainers ($F < 1$).

In sum, although trainees in the obese condition tended to report more negative evaluations of the training and the trainer, these differences did not reach conventional levels of significance (Hypothesis 3a). However, Hypothesis 3b was supported: The lowest evaluations of the training and the trainer were reported by trainees in the obese condition with female trainers.

Hypothesis 4: Trainee Performance on the Trained Task

We expected that obese trainees would perform more poorly on the trained task than the average-weight trainees. We did not find support for this hypothesis; no significant differences emerged in trainee performance as a function of weight or trainer gender (all ps $> .2$).

Exploratory Analyses

Consistent with trainer expectations and trainer posttraining assessments, trainees with female trainers in the obese condition rated the training and trainer more negatively than did trainees in the average-weight condition, suggesting a different quality training as a function of trainee weight. However, this treatment differential was not reflected in trainee performance on the task. A reason for this inconsistency may be instructor flexibility. According to self-fulfilling prophecy theories (e.g., Jussim, 1986), instructor flexibility is a key component of expectation perseverance. That is, self-fulfilling prophecy theory suggests that once expectations are formed, the rigidity of these expectations is critical for the manifestation of a self-fulfilling prophecy. A self-fulfilling prophecy will be realized only in instances in which the instructor does not adjust original expectations according to the target's actual ability. Therefore, trainers in the obese condition who were more flexible may have recognized their original erroneous expectations and adjusted their training and evaluations of the training accordingly. Consistent with self-fulfilling prophecy theory, only those trainers who maintained their original expectations should have demonstrated the self-fulfilling prophecy effect, resulting in trainee performance decrements.

To test this possibility, we used the interaction between trainer expectations and trainer posttraining evaluations as a representation of trainer flexibility. Moderated hierarchical regression analysis was used to predict trainee performance from the interaction between trainer expectations and trainer posttraining evaluations of the training. In the first step, we entered trainer expectations of the training. In the second step, we entered trainer evaluations of the training. In the third step, we entered the interaction between trainer expectations of the training and the trainer evaluations of the training (all variables were centered according to Cohen, Cohen, West, & Aiken, 2003).

Expectations and evaluations interacted to predict trainee performance on the task, $\beta = -2.18$, $t(37) = -2.96$, $p = .005$; $\Delta R^2 =$
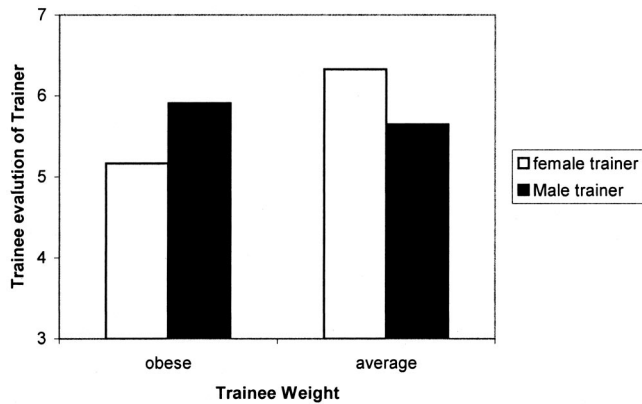

Figure 2.   Trainer evaluations of trainee after the training interaction as a function of trainer gender and trainee weight condition.

Figure 3. Trainee evaluations of trainer after the training interaction as a function of trainer gender and trainee weight condition.

.16, $p < .01$ (see Table 6). A simple slopes analysis (Cohen et al., 2003; Figure 4) revealed that when trainers held low pretraining expectations of the training, trainer posttraining assessment of the training was positively related to the trainee's performance, $\beta = 0.67$, $t(37) = 4.03$, $p < .001$. That is, within the trainers who originally held low pretraining expectations, as posttraining evaluations increased, trainee score increased. In contrast, trainers who reported the highest pretraining expectations of trainees demonstrated no relationship between trainer expectations and trainee performance, $\beta = -0.06$, $t(37) = -0.28$, $p = .78$ (e.g., Goranson, 1976; Griffin & Ross, 1991; Jacoby & Kelley, 1987).

In addition, we tested the role of trainee weight in the relationship between trainer evaluations and trainee performance. Consistent with Hypothesis 4, in the obese condition, the relationship between trainer evaluation of the training and trainee performance was extremely high ($r = .67$, $p = .001$); that is, as trainer posttraining evaluations increased, so did trainee performance. However, within the average-weight condition (where neither positive nor negative expectations were anticipated), there was no relationship between trainer evaluation of the training and trainee performance ($r = -.03$, $p = .91$). In sum, this exploratory analysis supports Hypothesis 4 for inflexible trainers: Trainees instructed by trainers who expected less and maintained these negative attitudes performed worse on the task. Furthermore, performance decrements were not elicited by trainers who adjusted their perceptions of the trainee after the training interaction.

Discussion

In this study, trainers instructed female trainees in a computer task after viewing a photograph depicting the trainee as obese or as average weight. After viewing the purported photo of the trainee, trainers provided their expectations of the training interaction and the trainee. We hypothesized and found that, relative to the trainers in the average-weight condition, trainers in the obese condition expected less of the training (Hypothesis 1a). In addition, compared with trainers in the average-weight condition, female trainers expected less success and a lower work ethic from the obese trainees (Hypothesis 1b). Furthermore, female trainers evaluated the trainee and the training more negatively in the obese condition (Hypothesis 2b). We further hypothesized and found that these results extended to the obese trainees, who had no knowledge of the picture manipulation and no reason to suspect differential treatment. Relative to the trainees in the average-weight condition, trainees in the obese condition with female trainers evaluated the trainer and the training more negatively (Hypothesis 3b). Although trainees in the obese condition did not ultimately perform more poorly on the task (Hypothesis 4), exploratory analyses supported the emergence of a self-fulfilling prophecy for inflexible trainers.

Thus, the present findings suggest that self-fulfilling prophecies may occur when trainers infer negative stereotypes from trainee characteristics. First, lower expectations held by female trainers based on trainee weight manifested into lower quality training as reported by the trainees. This is consistent with previous research on the communication of stigma. Subtle negative behaviors tend to "leak out" during interactions (e.g., Babad, Bernieri, & Rosenthal, 1989; Barr & Kleck, 1995; Fazio, Jackson, Dunton, & Williams, 1995) and, in general, are recognized by the other interactant (Dovidio, Gaertner, Kawakami, & Hodson, 2002). Second, although we did not find direct evidence that trainer expectations impeded knowledge transfer, we did find, consistent with self-fulfilling prophecy theory (Jussim, 1986), that for inflexible trainers, lower expectations because of trainee weight led to decrements in trainee performance. Thus, this study contributes to both the stigma and training literature, demonstrating that trainer bias can influence the perceived and actual quality of a training interaction.

In addition, this study is one of the first organization expectancy studies to find the strongest results among female trainers. Consistent with organizational research that suggests that, compared with men, women may be more critical of obesity (Decker, 1987; Pingitore et al., 1994) and of other women (Graves & Powell, 1995; King et al., 2005; Mathison, 1986; Staines et al., 1974), the current study demonstrates that female trainers in the obese condition expected less of trainees, were evaluated worse by their trainees, and evaluated the training to be worse. Researchers have repeatedly suggested the importance of exploring the consistent and mysterious finding that female leaders do not generally elicit organizational self-fulfilling prophecies (Dvir et al., 1995; McNatt,

Table 6

Hierarchical Regression Analysis of Trainer Expectations and Trainer Evaluations Used to Predict Trainee Performance on the Task

Step	Predictor	β	Total R^2	ΔR^2
1	Trainer expectations of training	−0.03	.001	
2	Trainer evaluations of the training	0.41*	.16	.16*
3	Trainer Expectations × Trainer Evaluations	−2.18**	.32	.16**

Note. $F(3, 37) = 5.75$, $p = .001$.
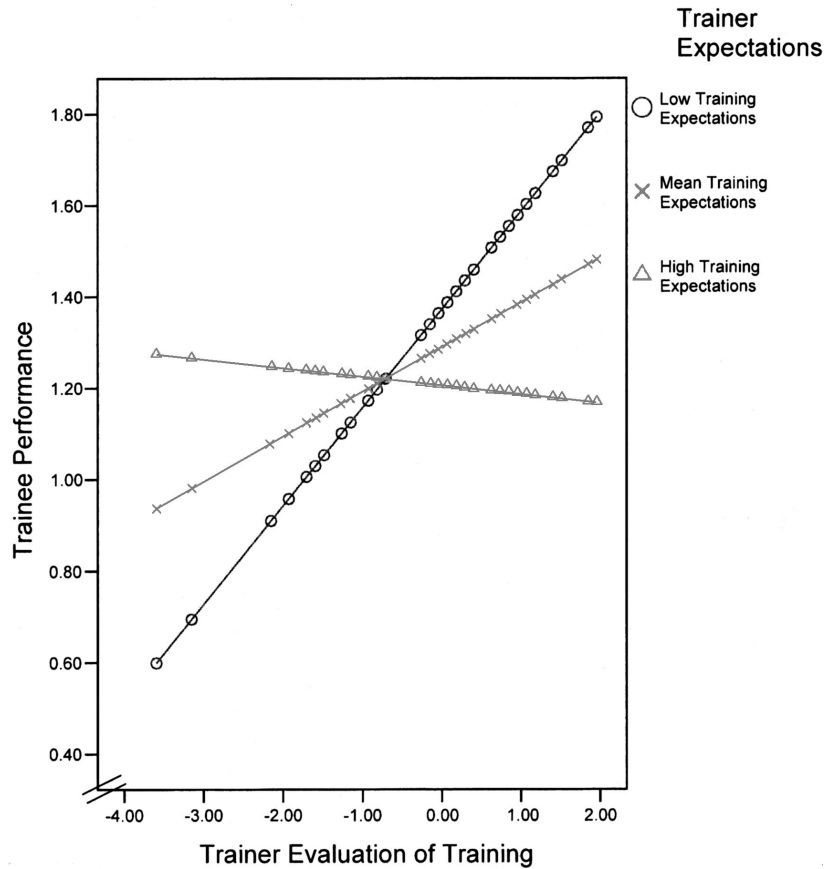* $p < .05$.   ** $p < .01$.

Figure 4. Trainer evaluation of the training predicting trainee score at different levels of trainer expectations of the trainee.

2000). White and Locke (2000) argued, "We believe that the most promising avenue for researching gender and the Pygmalion effect is to examine the characteristics of the subordinate population and how these interact with the characteristics of the leaders" (pp. 399–400). One such characteristic is trainee group membership. Thus, the present study offers a unique situation in which to assess gender differences in self-fulfilling prophecies: Although men are traditionally more likely to demonstrate expectancy confirmation effects, the targets in the present study—obese women—belong to a group that may face the most stigmatization from a female trainer. Therefore, the findings of the current study suggest that self-fulfilling prophecies may indeed occur in female-to-female interactions when the negative stereotype is in a domain in which women are likely to be critical. However, further research is necessary to fully understand when female and male leaders and trainers are more (or less) likely to induce self-fulfilling prophecies.

Consequently, this study makes broad contributions to the general training and stigma literatures, in addition to making more specific contributions to the self-fulfilling prophecy and stigma of obesity literatures. To our knowledge, there is no training research that addresses how stigmatized trainee characteristics can influence a training interaction. Organizations often implement training programs to level the playing field for all employees. However, it may be the case that this attempt is undercut by differences in the quality of the training offered to diverse individuals. Stigmatized employees who attend training programs to gain advancement may actually face discrimination within the training session that can contribute to justifiably negative evaluations. Thus, this study has pragmatic implications for organizations: Diverse employees may be receiving lower quality training as a result of lowered expectations held by trainers. As a result, these findings have implications for all organizational interactions that include diverse individuals, including, but not limited to, interviewing, evaluations, team projects, subordinate–supervisor interactions, customer service, and coworker interactions.

Limitations and Future Directions

Several limitations in this work raise additional questions for future research. First, this research was conducted within an undergraduate population, potentially limiting the generalizability of these findings to organizational communities. However, participants in the current study were students about to enter the workforce. Furthermore, expectancy research conducted within organizations has demonstrated that working adults fall prey to self-fulfilling prophecies (e.g., Eden, 1990a; Eden & Ravid, 1982; Eden & Shani, 1982) and discriminate against stigmatizable em-

ployees (for a review, see Dipboye & Colella, 2005). Second, this study was conducted in a one-on-one training session, potentially limiting the generalizability of these findings to classroom-type training sessions. However, the findings of this study are consistent with extant self-fulfilling prophecy studies that have found similar results among larger classroom-type interactions (e.g., Rosenthal & Jacobson, 1992). In addition, a one-on-one training environment may be a more conservative test of self-fulfilling prophecy effects. When an instructor is responsible for a large group of people, the instructor's resources are limited and are often distributed to those expected to succeed (e.g., Harris & Rosenthal, 1985; Rosenthal, 1973).

Another limitation is the potentially differential effects that a military-oriented computer task may evoke in men and women. However, gender differences in performance on the trained task did not emerge between the trainers in the present study and have not been reported in previous research using this task (e.g., Holladay & Quiñones, 2003; Quiñones, 1995). In addition, the nature of the task prevented close, personal interaction with the trainee, which may have different effects on men and women. Future research should explore the extent to which greater interpersonal interaction benefits women (or other collectivist groups or cultures) in organizational interactions. In addition, the question arises as to how the results would change if the trainee were a member of a different stigmatized group. Because different stereotypes accompany different group memberships, different individuals may face greater battles in different domains. Future research is needed to investigate the emergence of self-fulfilling prophecies in training interactions as a function of other characteristics (e.g., race, sexual orientation) and tasks (e.g., interpersonal skill training).

Finally, some of the effects detected in the present study did not reach widely accepted levels of statistical significance. This potential limitation is partially mitigated by the consistency of the results as a whole (all of the expected relationships were in the predicted directions), the consistency of the results with previous research on the self-fulfilling prophecy (e.g., Eden, 1990b; Kierein & Gold, 2000), and the consistency of the result with the theory-driven hypotheses. Furthermore, the effect sizes in the present study tended to be small to moderate (η^2s ranged from .05 to .15), which is consistent with (and higher than) most self-fulfilling prophecy research (for reviews, see Jussim, 1991; Jussim & Harber, 2005; Madon, Jussim, & Eccles, 1997). As evidenced by the provocative study conducted by Martell, Lane, and Emrich (1996), differences that can be accounted for by bias rooted in group membership, no matter how small, are far from trivial when one considers real-world organizational parameters.

Conclusions

The current findings stress the importance of two underresearched areas in organizational psychology: the trainer's role in the training process and the experiences of diverse populations in the training context. Whereas training research traditionally has focused on trainee variables that support or impede the transfer of learning, the findings of the present study bolster the need for the consideration of trainer-relevant variables. Furthermore, this research demonstrates that stigmatized individuals may face stereotype-driven expectations in training contexts that have the potential to influence trainer behaviors, the quality of the training interaction, and performance on the trained task (subsequently confirming the original stereotypes). This cycle may provide seemingly justifiable reasons for terminating, demoting, or preventing advancement of diverse individuals within the workforce. Thus, it is critical that researchers and practitioners of organizational psychology explore the potential effects of stereotypes held by leaders in organizational interactions and outcomes.

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