



ACADEMIC
PRESS

Available online at www.sciencedirect.com

SCIENCE @ DIRECT®

Journal of Research in Personality 37 (2003) 41–61

JOURNAL OF
RESEARCH IN
PERSONALITY

www.elsevier.com/locate/jrp

Self-evaluation bias and academic performance: Some ways and some reasons why

Richard H. Gramzow,^{a,*} Andrew J. Elliot,^b Evan Asher,^b
and Holly A. McGregor^b

^a *Department of Psychology, Northeastern University, 125 Nightingale Hall, Boston, MA, USA*

^b *Department of Clinical and Social Sciences in Psychology, University of Rochester, Rochester, NY, USA*

Accepted 18 June 2002

Abstract

Are positive illusions about the self adaptive? Controversy surrounding this question can be traced to two features of past research. First, different researchers have used different criteria to assess bias in self-evaluation. Some have relied on normative models, whereas others have relied on social consensus. We identify problems associated with each of these subjective methods and suggest the use of objective or operational criteria. Second, bias in self-evaluation can result from different motivations. In some cases, overly positive self-reports may reflect self-protective or avoidance motivations, whereas in other cases they may reflect self-enhancement or approach motivations. We argue that it is not the level of self-evaluation bias, per se, that determines whether such bias is associated with positive or negative consequences. Instead, consequences are related to the specific motivation underlying this bias. Two studies examine these issues in the context of self-evaluation and academic performance in college.

© 2002 Elsevier Science (USA). All rights reserved.

Keywords: Self-enhancement; Achievement motivation; Academic performance

1. Introduction

Considerable controversy exists in the psychological literature about the costs and benefits of exaggerating, or enhancing, the self. Clinical psychologists traditionally

* Corresponding author.

E-mail address: r.gramzow@neu.edu (R.H. Gramzow).

have linked mental health to accurate perceptions of self and reality (Jahoda, 1958; Rogers, 1951). Taylor and Brown (1988, 1994) proposed instead that positive illusions are a hallmark of adaptive psychological functioning—that self-enhancing deviations from reality are normative and generally beneficial. Other theorists challenged the Taylor and Brown perspective, claiming that their arguments suffer theoretical and empirical shortcomings (Colvin & Block, 1994).

2. The self-enhancement controversy

Much of the controversy can be traced to differences in the criteria, or baselines, that researchers use to assess bias in self-evaluation (Robins & John, 1997). These criteria, in turn, influence conclusions about why persons report overly positive self-views, and whether these positive illusions are beneficial.

2.1. Normative models

Normative models represent one approach to assessing bias in self-evaluation (Robins & John, 1997). A common procedure is to ask participants to compare the self to an average or generalized other. The majority of persons rate themselves as superior to others, and they do so across a wide array of positive attributes (e.g., Alicke, 1985; Campbell, 1986). Positive discrepancies of this type correlate positively with self-esteem (Brown, 1986) and positive affect (Gibbons, 1986). Findings based on this approach, therefore, are consistent with Taylor and Brown's (1988) assertion that positive illusions about the self are normal and adaptive.

Colvin and Block (1994), however, argued that judgments about abstract others (e.g., “the average person”) are not an appropriate baseline for assessing bias in self-evaluation. The problem with this approach, according to Colvin and Block, is that it does not distinguish persons who are accurate in describing themselves from persons who are inaccurate. That is, some who claim to be superior on a given dimension (e.g., athleticism) will be exaggerating their true standing, whereas others will be identifying a verifiable aspect of themselves.

We refer to this as the *accuracy/exaggeration problem*. Importantly, this problem makes it difficult to interpret any observed relation between patterns of self-evaluation and other constructs, such as psychological well-being. Using normative models, it is not possible to conclude that positive *illusions* about the self are adaptive, because some persons labeled as “self-enhancers” may enjoy psychological benefits associated with legitimately favorable social comparisons. The critics of this method, therefore, argue that external criteria are needed to gauge the veracity of a person's self-description.

2.2. Social consensus

To establish an external criterion, researchers sometimes rely on social consensus (Robins & John, 1997). For example, Colvin, Block, and Funder (1995) used a set of

100 personality-related items to contrast teenagers' self-descriptions with observer-ratings. Psychologists and graduate students who interacted with each teenager "across many sessions over several days" served as observers. An index of self-evaluation bias was derived by comparing the favorability of self-ratings with the favorability of observer-ratings. Those participants who evaluated themselves more favorably than they were evaluated by the observers were labeled "self-enhancers." A second, independent set of observer-ratings (obtained five years after the first assessment) was used to determine whether self-enhancers benefited psychologically from their positive self-views. To the contrary, self-enhancement bias at the first assessment was associated with negative observer-ratings five years later. Colvin et al. (1995) also compared self-ratings to ratings made by peers (primarily friends and roommates). Participants who rated themselves more favorably than they were rated by their peers were evaluated negatively by strangers following a brief discussion and debate. Based on third-party ratings, then, overly positive self-evaluations appear to be related to negative interpersonal characteristics (see also, John & Robins, 1994).

This conclusion is supported and qualified by Paulhus (1998, Study 2), who compared university students' self-ratings with ratings made by close acquaintances. He classified students who evaluated themselves more favorably than they were evaluated by their acquaintances as self-enhancers. All students later began a series of weekly discussion groups (students in each group were unfamiliar with one another prior to these discussions). After each discussion, group members evaluated each other on several personality attributes. Following the first discussion, students classified previously as self-enhancers received favorable evaluations from their fellow group members. By the seventh week, however, self-enhancement was associated with unfavorable evaluations. Thus, overly positive self-evaluations were beneficial when making first impressions, but these impressions turned sour over time.

Using social consensus as an external criterion may address the accuracy/exaggeration problem inherent in the normative approach by identifying persons whose positive self-evaluations are not corroborated by others. However, this method may have some drawbacks of its own. For one, there is a hint of cyclical logic to the conclusion that self-enhancement is maladaptive. This is because third-party ratings are used both to measure self-evaluation bias and to assess whether such bias is psychologically beneficial. For example, in Colvin et al.'s (1995) Study 1, observer-ratings were used as the criterion for establishing self-evaluation bias at Time 1. At Time 2, observer-ratings were used as the index for psychological well-being. Thus, the association between self-enhancement and poor psychological well-being may reflect the fact that observers formed similar judgments of each participant. Persons who were evaluated unfavorably by both sets of observers likely would have had high self-enhancement scores and negative psychological well-being scores, whereas persons evaluated favorably by both sets of observers likely would have had low self-enhancement scores and positive well-being scores. The association may have little to do with self-evaluation, per se.

Second, the negative consequences associated with this form of self-evaluation bias have been restricted primarily to *interpersonal* outcomes and ratings. It is possible that overly positive self-evaluations are maladaptive for interpersonal

impressions and relationships, but that they facilitate successful task performance and subjective well-being. Indeed, Paulhus (1998) argued that self-enhancement is a “mixed blessing”—being associated positively with self-reported ego-resilience and self-esteem, despite its association with negative evaluations from other persons. Third, there is no reason to assume that social consensus is necessarily more accurate than self-ratings. Each person has access to unique information about the self that is not available to outside observers. Clearly, social consensus represents a reality; but it is not the only reality.

Finally, in both approaches, researchers have used attributes that are global and ambiguously defined (e.g., “intelligent,” “well-adjusted,” and “agreeable”). These attributes may be problematic for establishing self-evaluation bias because participants often use idiosyncratic criteria when making self-ratings on global traits (Dunning, Meyerowitz, & Holzberg, 1989). For instance, one person may claim to be “talented” because of musical abilities, while another may claim to be “talented” because of academic abilities. In effect, different persons can apply different definitions to the same global trait. In addition, different definitions may shift whether a global trait is perceived to be positive or negative. For example, traits such as “competitive,” “dominant,” and “proud” could be viewed in either a positive or negative light, depending on the context. This asymmetry implies that trait-ratings of the self and others may not be directly comparable (Hayes & Dunning, 1997). As a result, measures of self-evaluation bias that are based either on normative models or on social consensus may be contaminated by individual differences in judgment criteria. We refer to this as the *asymmetric-definition problem*.

2.3. Operational criteria

A third approach to assessing bias in self-evaluation is to concentrate on attributes that are specific, objective, and verifiable. Robins and John (1997) refer to these as *operational criteria*. Within important domains of self-evaluation (e.g., academic/intellectual performance for college students), it is possible to identify operational criteria (e.g., test scores, grade point averages, or class rank) that persons may misreport due to self-evaluative concerns. Using operational criteria to assess biased self-views avoids the accuracy/exaggeration problem by distinguishing persons whose favorable self-reports are accurate from those whose self-reports are exaggerated. In addition, it avoids the asymmetric-definition problem by providing a concrete definition of the attribute. Despite these benefits, research involving specific, objective, and verifiable aspects of the self is lacking.

2.4. Difference scores versus residuals

Finally, researchers have used two basic strategies for calculating self-evaluation bias. One strategy is to calculate a difference score by subtracting the criterion from the self-report. Concerns about the use of difference scores, however, have prompted an alternative strategy, in which self-reports are regressed on the external criterion, and the residual is used as the index of self-evaluation bias. Paulhus and John (1998)

recommend this second strategy, which they term the *self-criterion residual* (SCR), because it removes any variance that is due to individual differences on the criterion (see also Robins & John, 1997). One consequence of the SCR procedure is that it eliminates the possibility of a negative association between the criterion and the bias index. The concern is that this negative association (if observed) is a statistical artifact that confounds interpretation of the bias variable. In contrast, Colvin, Block, and Funder (1996) argue that the association between the criterion and the level of bias in self-report represents a conceptually important self-evaluative process. We believe that insights can be gained from both strategies. Thus, we incorporate both the difference score and residual strategies in our analyses, and attempt to highlight the conceptual and statistical differences between these two approaches.

3. Exaggerating one's academic performance

The controversy over self-evaluation bias can be framed in three questions. First, what criteria should researchers use to establish reality? Second, why would persons exaggerate their self-reports relative to these criteria? Third, what costs and benefits are associated with the tendency to exaggerate self-reports? In the present article, we address each of these questions as they relate to students' self-reports of academic performance.

3.1. GPA: The criterion

First, how should reality be defined? In this article, we used grade point average (GPA) as an operational criterion. We chose GPA because it is specific, objective, and verifiable. In addition, it is a value known by students (they receive this information at the end of each semester); it reflects an important attribute (competence); it has instrumental significance (being linked to occupational and educational prospects upon graduation); and it is malleable and controllable (a student's behavior can impact his or her GPA). In short, reporting GPA is likely to be an ego-involved task for many students.

3.2. Motivational antecedents of GPA exaggeration

Second, why might students exaggerate their GPAs? We believe that exaggerated self-reports in this context can reflect concerns either with self-protection or with self-enhancement (Baumeister, Tice, & Hutton, 1989). Self-protection represents a motivation to avoid negative inferences about the self, whereas self-enhancement represents a motivation to create positive inferences about the self. The distinction between protection and enhancement has been identified as an important difference in self-presentational style. For example, high self-esteem persons self-handicap following success in order to enhance the self, whereas low self-esteem persons self-handicap following failure in order to protect the self (Rhodewalt, Morf, Hazlett, & Fairchild, 1991; Tice, 1991). Similar distinctions have been made in the motiva-

tional literature on goals and self-regulation. For example, Elliot, Sheldon, and Church (1997) distinguished between approach goals that focus on acquiring or maintaining a positive outcome or state, and avoidance goals that focus on moving or staying away from a negative outcome or state. Likewise, Higgins (1999) distinguished between promotion-focused forms of self-regulation that are associated with a sensitivity to potential positive outcomes, and prevention-focused forms of self-regulation that are associated with a sensitivity to potential negative outcomes.

Based on the distinction between self-protection/avoidance and self-enhancement/approach, we identified two distinct motivational antecedents for GPA exaggeration. First, we predict that low actual GPA will be associated with exaggerated self-reports of GPA. Acknowledging low grades (even to the self) could produce negative affect, because low grades suggest a lack of academic ability or effort. By denying poor performance, negative affect may be managed or partially avoided. This motivation for exaggeration is self-protective in that it is prompted by a desire to avoid negative implications that would result from acknowledging poor performance.

Second, we believe that individual differences in the motivational significance of GPA will be an additional factor contributing to exaggerated self-reports. Paulhus and John (1998) distinguished between two primary dimensions of self-evaluation bias: *egoistic bias*, which is reflected in self-reports of status and competence, and *moralistic bias*, which is reflected in self-reports of conscientiousness and other socially approved behaviors. Paulhus and John linked egoistic bias to the human value of agency, which emphasizes “individuality, personal striving, growth, and achievement,” and they link moralistic bias to the value of communion, which emphasizes “relationships, intimacy, and benefiting others” (p. 1039). We believe that self-reports of GPA will be influenced primarily by egoistic concerns related to competence. In addition, we believe that the value of agency is best represented in the academic context by *need for achievement* (Atkinson & Feather, 1966; Murray, 1938). This motive represents a dispositional desire to meet high standards and attain excellence (McClelland, 1985). Given that self-report bias often accompanies a motive to excel in a given domain (Paulhus & John, 1998), we predict that persons high in need for achievement will exaggerate their self-reports of GPA. This motivation for exaggeration is self-enhancing in that it is prompted by a desire to experience the positive implications that would result from successful performance.

3.3. Distinguishing between motivational factors

We have argued that actual level of performance and need for achievement will each predict exaggerated self-reports of GPA. But, how can we distinguish these two motivational factors from one another?

Independent and opposite effects. First, we regard the two motivational factors as conceptually independent predictors of exaggeration. They may be correlated positively with one another, because persons high in need for achievement may also obtain good grades. As detailed above, however, they are posited to have opposite relations to exaggeration. We predicted that actual performance would be negatively

related to exaggerated reports of GPA, whereas need for achievement would be positively related to exaggeration.

Subsequent performance. Second, we believe that these two motivations have different consequences for future academic performance. This distinction addresses the third question surrounding the self-enhancement controversy: What costs and benefits are experienced by persons who report overly positive self-views? As we described earlier, the literature is divided as to whether self-evaluation bias contributes to favorable psychological outcomes (Colvin & Block, 1994; Paulhus, 1998; Taylor & Brown, 1988). The literature is also divided as to whether such bias facilitates subsequent performance. In some studies, overly positive self-views appear to be associated with performance advantages (e.g., Blanton, Buunk, Gibbons, & Kuyper, 1999). In other studies, persons with overly positive self-views perform no better than those who provide accurate self-reports (e.g., Robins & Beer, 2001).

There appears, then, to be no clear relation between self-evaluation bias and subsequent performance. We believe that this ambiguity reflects the fact that distinct motivational antecedents may be contributing to exaggerated self-reports. On one hand, we have argued that some students exaggerate their GPAs to avoid the negative implications associated with poor actual performance. On the other hand, we have argued that exaggeration may also reflect a need to achieve academically. As noted previously, an important distinction between these two motivational processes is the degree to which they represent a protection/avoidance orientation or an enhancement/approach orientation. It may be the case, therefore, that exaggeration will be differentially associated with performance as a function of the motivational factor that is contributing to the exaggeration. This notion led to our final pair of predictions. To the degree that exaggerated self-reports reflect poor actual performance (protection/avoidance), we predict that exaggeration will be coordinated with poor performance in the future. However, once actual performance is statistically controlled, and exaggeration reflects a strong achievement motivation (enhancement/approach), we predict that exaggeration will be associated with improved future performance. We test these possibilities using a series of regression analyses.

4. Study 1

4.1. Overview

The purpose of Study 1 was to test three sets of hypotheses. First, will students exaggerate their academic performance, relative to an objective and verifiable criterion (GPA)? Second, will an enhancement/approach motivation (need for achievement) and a protection/avoidance motivation (poor prior performance) independently predict exaggerated self-reports? And, third, will exaggeration grounded in poor prior performance predict poor subsequent performance, while exaggeration grounded in need for achievement predicts improved performance?

In addition, we examined models that treat exaggeration both as a difference score and as a self-criterion residual score (self-reported GPA controlling for actual GPA).

5. Method

5.1. Participants and overview of procedure

Data for Study 1 came from a larger investigation of academic motivation and performance (Elliot & McGregor, 1999). A total of 177 university students (75 male and 102 female) from an undergraduate psychology course participated in exchange for extra credit. The study was conducted in multiple sessions over the course of a semester.

5.2. Materials

5.2.1. Grade point average (GPA)

During the first week of the semester, participants completed a demographic questionnaire in which they indicated their cumulative grade point average (GPA) through the previous semester. The grading scale at this university ranges from 0.0 to 4.0. Participants' actual GPAs were obtained from the university registrar (with student consent, which was obtained after receiving self-reports of GPA).

5.2.2. Need for achievement

During the first two to three weeks of the semester, participants completed a questionnaire that contained the achievement motivation subscale from the Personality Research Form (Jackson, 1984). Previous research supports the reliability and construct validity of this measure (Fineman, 1977; Fiske, 1973; Harper, 1975). In addition, previous work attests to its predictive validity in the college classroom (Elliot & Church, 1997). The achievement motivation scale is composed of 16 true–false items, such as “I often set goals that are difficult to reach” and “I will not be satisfied until I am the best in my field of work.” The internal consistency of this scale was satisfactory for the present sample ($K-R\ 20 = .71$).

5.2.3. Subsequent performance

Participants' final grades for the course were based on three exams given during the semester. Course grades were recorded as the proportion of total points earned by each participant.

6. Results

6.1. Exaggeration in self-reports of GPA

We computed an *exaggeration index* by subtracting each participant's actual GPA from his or her self-reported GPA (i.e., a difference score). On average, participants over-reported their GPAs by just over 1/10th of a point ($M = .114$, $SD = .338$). This was a significant discrepancy, $t(173) = 4.45$, $p < .001$. The degree of exaggeration varied widely (min = -0.84 ; max = 2.33). Few students (9.2%) under-reported their

GPA's by more than 5/100ths of a point, whereas many students (45%) over-reported by this margin. Indeed, 14% over-reported by at least 1/4 point, 6% by at least 1/2 point, and 3% by a full point or more.

6.2. *Predicting exaggeration*

Having determined that students, on average, did exaggerate their GPA's, we next examined whether levels of actual performance and achievement motivation predicted the magnitude of exaggeration. Table 1 contains the bivariate associations among these variables. First, achievement motivation and actual GPA were correlated positively with one another. However, these two predictors had opposite relations with the exaggeration difference score. Actual GPA was associated negatively with exaggeration, whereas achievement motivation was associated positively with exaggeration.

A multiple regression analysis predicting exaggeration from both achievement motivation and actual GPA indicated that each predictor had a significant unique association with exaggeration. Higher achievement motivation was related to higher exaggeration ($\beta = .29, p < .001$), whereas lower actual GPA was related to higher exaggeration ($\beta = -.56, p < .001$). Note that, by controlling for actual GPA, this analysis indicates that achievement motivation predicted a residualized index of exaggeration.¹

6.3. *Predicting final grade*

We next examined the relation between the tendency to exaggerate one's GPA and subsequent academic performance. The correlations in Table 1 indicate that the exaggeration difference score was correlated negatively with final course grade. This suggests that exaggeration may have detrimental effects on subsequent performance. The pattern of associations, thus far, is represented in Fig. 1 (Model 1).

Table 1 also indicates that achievement motivation and actual GPA were each correlated positively with the final grade in the course, even though they had opposite relations with exaggeration. Recall our prediction that the relation between exaggerated self-reports and subsequent performance will depend on the motivation underlying the exaggeration. To address this possibility, we examined the relation between exaggeration and final grade, first controlling for the effects of one motivational variable (achievement motivation), and then controlling for the effects of the other motivational variable (actual GPA).

In Model 2, using multiple regression, we controlled for the effects of achievement motivation on final grade. As shown in Fig. 1 (Model 2), the relation between the

¹ Controlling for actual GPA when predicting the exaggeration difference score (self-reported GPA–actual GPA) yields the same residual that would result from controlling for actual GPA when predicting self-reported GPA alone. In both cases the residual represents self-reported GPA removing the variance associated with the criterion (actual GPA). This is why controlling for actual GPA effectively transforms the exaggeration index from a difference score into a self-criterion residual score.

Table 1
Correlations among all variables: Study 1 and Study 2

Measure	1	2	3	4	5
1. Achievement motive	—	.12	.22*	.08	.19*
2. Actual GPA	.22**	—	.78***	-.64***	.50***
3. Self-reported GPA	.36***	.83***	—	-.02	.50***
4. Exaggeration	.17*	-.50***	.06	—	-.19*
5. Final course grade	.20**	.69***	.65***	-.23**	—

Note. Values below the diagonal represent correlations for Study 1 ($N = 172$). Values above the diagonal represent correlations for Study 2 ($N = 104$).

* $p < .05$.

** $p < .01$.

*** $p < .001$.

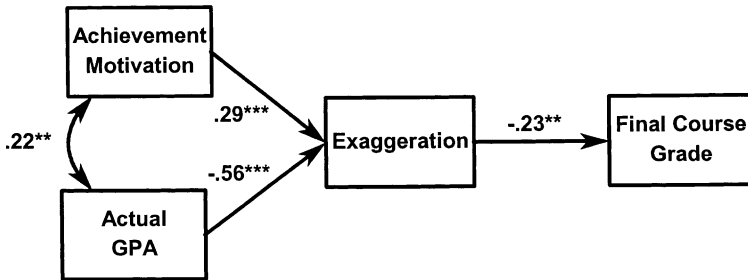
exaggeration difference score and final grade remained negative. In this model, exaggeration reflected its association with poor actual GPA and, therefore, was coordinated with poor grades in the future.

In Model 3, we controlled for the effects of actual GPA on final grade. As noted previously (see Footnote 1), this transforms the exaggeration index from a difference score into a self-criterion residual score. As shown in Fig. 1 (Model 3), the relation between the exaggeration residual score and final grade became positive and significant. In this model, exaggeration reflected its association with achievement motivation and was coordinated with improved academic performance (relative to initial level of GPA).

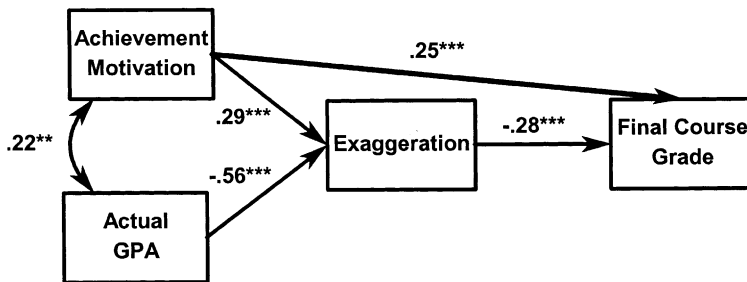
6.4. An alternative index of exaggeration: proportion

Our use of a difference score as the exaggeration index raises the possibility that the negative correlation between actual performance and exaggeration is a statistical artifact. That is, students with lower grades have more room on the 0–4 GPA scale to exaggerate than do students with higher grades. For example, a student with an actual GPA of 2.3 could exaggerate by a maximum of 1.7 points, whereas a student with a GPA of 3.5 could exaggerate by a maximum of only .5 points. In an attempt to address the possibility that the association between GPA and exaggeration was spurious, we calculated the exaggeration index using an alternative procedure. For each student, we determined the difference between his or her actual GPA and the maximum GPA possible (4.0). We then computed the exaggeration index as the proportion of this difference by which the student's self-report deviated from his or her actual GPA. Thus, students at all levels of actual GPA could conceivably exaggerate by the same magnitude. In addition, this procedure magnifies the exaggeration scores of students with high actual GPAs, because a smaller raw change would be associated with a larger proportion score at higher GPA levels. Thus, the *proportion index* provides an extremely conservative test of our hypothesis. Nevertheless, lower actual GPAs continued to be associated with greater exaggeration using this alternative index ($r = -.27, p < .001$). In addition, controlling for actual GPA, higher achievement motivation continued to be associated with greater exaggeration ($\beta = .25, p < .001$).

Model 1



Model 2



Model 3

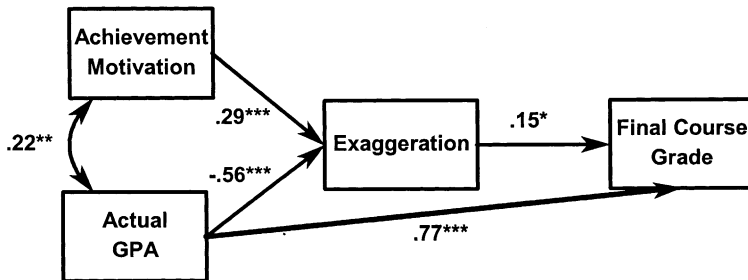


Fig. 1. Study 1: Summary of regression analyses examining motivational antecedents and performance consequences of exaggerated self-reports of GPA. All values represent standardized regression coefficients. In all three models, the paths from Achievement Motivation and Actual GPA to Exaggeration were derived from a multiple regression analysis predicting Exaggeration. In Model 1, the path from Exaggeration to Final Grade was derived from a simple regression analysis. In Model 2, the path from Exaggeration to Final Grade was derived from a multiple regression analysis including Achievement Motivation as a second predictor. In Model 3, the path from Exaggeration to Final Grade was derived from a multiple regression analysis including Actual GPA as a second predictor. * $p < .05$; ** $p < .01$; *** $p < .001$.

7. Study 2: A replication

In light of the complex relations we observed among the variables in Study 1, we elected to conduct a replication.

8. Method

8.1. Participants

A total of 111 university students (43 male and 68 female) from an undergraduate psychology course participated in exchange for extra credit. The study was conducted in multiple sessions over the course of a semester. Seven students with actual GPAs of 4.0 were dropped from all analyses, because over-reporting was not possible in these cases.

8.2. Procedure

We used the same procedures as in Study 1 to obtain self-reported and actual GPA, achievement motivation (K-R 20 = .69), and final course grade.

9. Results

9.1. Exaggeration in self-reports of GPA

On average, participants over-reported their GPAs by just under 1/10th of a point ($M = .079$, $SD = .383$). As in Study 1, this was a significant discrepancy, $t(103) = 2.10$, $p < .05$. Again, the degree of over-reporting varied widely (min = -0.67 ; max = 1.78). Twenty percent of students over-reported their GPAs by at least 1/4 point, 8% by at least 1/2 point, and 4% by a full point or more.

9.2. Predicting exaggeration

We next examined whether levels of actual performance and achievement motivation predicted the magnitude of exaggeration. Unlike Study 1, achievement motivation and actual GPA were not significantly correlated with one another. In addition, although actual GPA was associated negatively with exaggeration, the correlation between achievement motivation and exaggeration was not significant.

When we entered achievement motivation and actual GPA simultaneously into a regression model, however, each predictor had a significant unique association with exaggeration. Higher achievement motivation was related to higher exaggeration ($\beta = .16$, $p < .05$), whereas lower actual GPA was related to higher exaggeration ($\beta = -.66$, $p < .001$).

9.3. Predicting final grade

Consistent with Study 1, there was a significant negative correlation between the exaggeration difference score and final course grade (Table 1). The pattern of associations, thus far, is represented in Fig. 2 (Model 1).

Also consistent with Study 1, achievement motivation and actual GPA were each correlated positively with the final grade in the course. Therefore, we repeated the regression analyses from Study 1 examining the relation between exaggeration and final grade, first controlling for the effects of achievement motivation, and then controlling for the effects of actual GPA. Replicating the Study 1 findings, the relation between the exaggeration difference score and final grade remained negative after controlling for the effects of achievement motivation (Fig. 2: Model 2). In Model 3, we controlled for the effects of actual GPA on final grade. As shown in Fig. 2 (Model 3), the relation between exaggeration (now a residualized score) and final grade became positive and significant.

9.4. An alternative index of exaggeration: proportion

We also computed the alternative, proportion index of exaggeration. Using this index, lower actual GPA continued to be associated with greater exaggeration ($r = -.38, p < .001$). Likewise, controlling for actual GPA, higher achievement motivation continued to be associated with greater exaggeration using the proportion index ($\beta = .18, p < .05$).

10. Discussion

Results from both samples support our three primary hypotheses. First, students exaggerated their academic performance. Second, an enhancement/approach motivation (need for achievement) and a protection/avoidance motivation (poor prior performance) independently predicted exaggerated self-reports. And, third, exaggeration grounded in poor prior performance predicted poor subsequent performance, while exaggeration grounded in need for achievement predicted improved performance.

Beyond these three specific predictions, we sought to clarify several issues related to the broader controversy, or ambiguity, about whether biases in self-evaluation are adaptive. Consistent with past theorists (Robins & John, 1997), we argued that researchers should consider carefully the criteria that they use to assess self-evaluation bias. The index researchers choose to represent the magnitude of bias is of additional importance (e.g., difference score or residual). Finally, we argued that the same level of bias may reflect different motivational factors, and that these distinct motivations determine whether exaggerated self-reports are coordinated with positive or negative outcomes. We explore these issues in greater detail below.

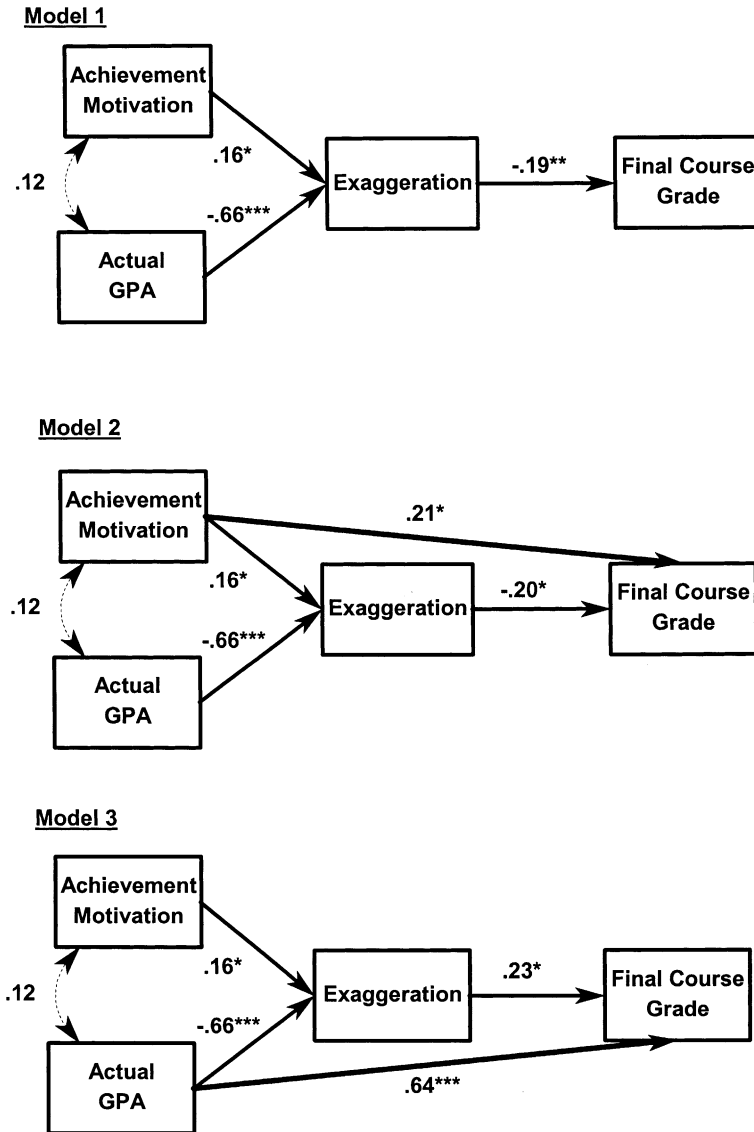


Fig. 2. Study 2: Summary of regression analyses examining motivational antecedents and performance consequences of exaggerated self-reports of GPA. All values represent standardized regression coefficients. In all three models, the paths from Achievement Motivation and Actual GPA to Exaggeration were derived from a multiple regression analysis predicting Exaggeration. In Model 1, the path from Exaggeration to Final Grade was derived from a simple regression analysis. In Model 2, the path from Exaggeration to Final Grade was derived from a multiple regression analysis including Achievement Motivation as a second predictor. In Model 3, the path from Exaggeration to Final Grade was derived from a multiple regression analysis including Actual GPA as a second predictor. * $p < .05$; ** $p < .01$; *** $p < .001$.

10.1. Assessing self-evaluation bias

We selected an operational criterion (GPA) for assessing bias in self-reports. Because GPA is objective, specific, and verifiable, it provided several benefits. First, it allowed us to distinguish those students who exaggerated their self-reported GPA scores from those who accurately reported high GPAs. This overcame the accuracy/exaggeration problem inherent in the normative model approach. Second, it allowed us to be more certain that all students defined the attribute similarly when providing their self-reports, and that this definition matched the external criterion by which we assessed self-evaluation bias. This overcame the asymmetric-definition problem inherent in the social consensus approach.

We would like to emphasize, however, that meaningful operational criteria may not exist for all attributes of psychological relevance, and, thus, may not be appropriate for all research contexts. For example, we are not aware of objective tests for physical attractiveness or sense of humor. In addition, operational criteria tend to be narrowly defined. Researchers interested in broader constructs, such as personality dimensions, are likely to find operational criteria ill suited for their needs. A primary purpose of the present research was to demonstrate that people exaggerate their self-attributes even in comparison to objective and verifiable criteria; we are not suggesting that such criteria are the only meaningful comparison.

10.2. Self-evaluation bias is multiply motivated

The second purpose of this article was to examine motivational factors underlying the tendency to exaggerate academic performance. We argued that self-evaluation bias results from multiple factors—that persons exaggerate their self-reports for various reasons.

Self-protection. The first reason for exaggerating was the desire to cover up poor actual performance. We predicted that students with low actual grades would exaggerate their GPAs to a greater degree than students with high grades. Results from both samples supported the predicted negative relation between actual GPA and exaggeration. We argued that exaggerated self-reports are self-protective in this case, enabling exaggerators to avoid the negative implications associated with acknowledging poor performance. Previous research demonstrates that denying negative information about the self can have short-term psychological benefits (see Suls & Fletcher, 1985, for a review). We consider the negative association between actual performance and exaggeration to reflect this process.

As noted previously, we used a difference score to measure exaggeration, and actual GPA (our measure of protection motivation) was a component of this difference score. This may seem problematic because difference scores often are correlated with their components (Campbell & Kenny, 1999; Cronbach & Furby, 1970). Although such relations are common, however, they are not predetermined (Rogosa & Willett, 1983). In the present article, actual GPA was significantly correlated with the self-exaggeration difference score (Study 1: $r = -.50$, $p < .001$; Study 2: $r = -.64$,

$p < .001$), whereas self-reported GPA (the other component of the difference score) was not (Study 1: $r = .06$, $p = .436$; Study 2: $r = -.02$, $p = .845$).

Nevertheless, we noted in the Results section of Study 1 that the observed relation between actual GPA and the exaggeration difference score could be a statistical artifact. To address this possibility, we computed an alternative proportion index. This index represented the degree to which a given student exaggerated his or her GPA as a proportion of the difference between his or her actual GPA and the maximum GPA of 4.0. For this index, participants at all levels of actual GPA were equated in terms of the magnitude by which they could exaggerate. In both samples, the negative correlation between actual GPA and exaggeration remained significant using this alternative index. The robustness of this correlation across the two indexes of exaggeration suggests that the negative association between actual GPA and exaggeration cannot be attributed entirely either to a ceiling effect or to regression toward the mean.

Kruger and Dunning (1999) reported a similar relation between actual and self-reported performance. For example, participants in one of their studies took a logical reasoning test that could be scored objectively. Those participants who performed poorly on the test over-estimated their scores, whereas those who performed well estimated accurately (i.e., there was a negative correlation between actual performance and over-estimation). Kruger and Dunning attributed this pattern to two deficits among poor performers. First, poor performers were incompetent on the test itself. Second, they lacked the meta-cognitive skills to recognize their incompetence (see Krueger & Mueller, 2002, for an alternative interpretation).

Kruger and Dunning's (1999) findings suggest that students with poor actual GPAs in our research may have over-reported their grades because of an inability to recognize their poor academic performance. A key difference between the two paradigms, however, is that participants in Kruger and Dunning's research received no objective feedback about their actual performance. The participants, therefore, estimated how well they did in an ambiguous context. By contrast, university students receive regular reports of their grades and overall GPA. In addition, although low-GPA students might be less aware of their actual grades than high-GPA students, it seems informative about their self-evaluative motivations that their self-reports are systematically inflated, rather than simply inaccurate. In effect, we believe that these students are avoiding the reality of their poor academic standing, and are over-reporting that standing as a way to protect themselves from its negative implications. We do not believe that they lack the capacity to read their transcripts.

Self-enhancement. The second motivation on which we focused was need for achievement. We predicted that students with high need for achievement would over-report their GPAs to a greater degree than students with low need for achievement. Results from both samples supported the predicted positive relation between need for achievement and exaggeration. This pattern was consistent with the argument that motivation to excel in a given domain (i.e., an enhancement/approach orientation) can contribute to egoistic bias in self-reports, even with respect to an objective criterion such as GPA. In addition, our results indicated that the associa-

tion between need for achievement and exaggeration was statistically independent from the association between actual performance and exaggeration.

Likewise, when controlling for actual GPA, achievement motivation continued to be a significant predictor of exaggeration using the alternative proportion index of exaggeration. Thus, the positive relation between achievement motivation and exaggerated self-reports of GPA is not restricted to a specific operationalization of the exaggeration construct.

10.3. Different motivations have different implications

The third purpose of this article was to examine whether the motivations underlying self-exaggeration qualify relations between exaggeration and other variables. We argued that exaggerated self-reports can have positive or negative consequences, depending on their impetus.

Overall, exaggerated self-reports were associated with poor subsequent performance (Model 1). Students who exaggerated their GPAs at the beginning of the semester received lower final marks in the psychology course than students who reported their GPAs more accurately. Recall that exaggeration was represented by a difference score at this stage of the analysis.

We predicted that the relation between exaggeration and subsequent performance would differ based on the motivational factor underlying the exaggerated self-report. Specifically, to the degree that exaggerated self-reports reflected poor actual performance (protection/avoidance), we predicted that exaggeration would be coordinated with poor performance in the future. However, once actual performance was statistically controlled, and exaggeration reflected a strong achievement motivation (enhancement/approach), we predicted that exaggeration would be associated with improved future performance. Therefore, in subsequent analyses, we examined the association between exaggeration and subsequent performance, alternatively controlling for each of the two motivational factors.

When we controlled for achievement motivation, exaggeration reflected its association with low GPA (Model 2). In both studies, achievement-motivation-free exaggeration continued to predict poorer final grades in the course. Importantly, exaggeration retained its status as a difference score in this model.

The next model (Model 3) confirmed that the negative relation between exaggeration and subsequent performance reflected the strong associations between these two variables and actual GPA. Once the effects of actual GPA were controlled, exaggerated self-reports were associated with improved performance. Controlling for actual GPA in this analysis has two implications for interpreting these results. First, it means that exaggeration should be interpreted as a self-criterion residual score, rather than a difference score (see Footnote 1). Second, it means that subsequent performance should be interpreted as a performance residual. This is because the variance based on previous performance (actual GPA) was removed from the measure of subsequent performance (final grade). Thus, these findings suggest that the exaggeration residual score predicted higher grades than would be predicted by past performance alone. This positive association between exaggeration and final grade

(controlling for initial GPA) is consistent with the notion that there may be performance benefits associated with self-exaggeration when it is motivated by an enhancement/approach orientation (such as achievement motivation).

10.4. Some final thoughts on the use of difference scores versus residuals

The relation between exaggeration and final course grade initially suggested that self-evaluation bias corresponded with poor subsequent performance (Models 1 and 2). With actual GPA held constant, however, greater exaggeration was associated with higher final grades (Model 3). This reversal underscores the complex nature of the association between self-evaluation bias and subsequent performance, and has several statistical and conceptual implications.

Statistically, this reversal indicates that actual GPA served as a suppressor variable in the relation between the exaggeration difference score and final course grade (Tzelgov & Henik, 1991). Actual GPA was related strongly both to exaggeration (negatively) and to final grade (positively). These relations masked a positive relation between exaggeration and subsequent performance, which was revealed only after the effects of GPA were controlled. Thus, the initial negative association between exaggeration and subsequent performance reflected the common link between these two variables and actual GPA. Once the effects of actual GPA were controlled, however, exaggeration reflected its association with high achievement motivation, and was coordinated with improved academic performance (relative to initial actual GPA).

Conceptually, this reversal underscores the importance of distinguishing between the use of difference scores and residuals as indexes of self-evaluation bias. Simply put, the suppression pattern described above indicates that the exaggeration difference score predicted poor subsequent performance, whereas the exaggeration residual score predicted improved performance. The shifting relation between exaggeration and subsequent performance implies that exaggeration based on a difference score reflects a distinct theoretical construct from exaggeration based on a residual procedure. We believe that adopting both strategies has allowed us to provide a more complete account of the antecedents and consequences of self-evaluation bias. If we had focused solely on a residualized score, we would have been unable to include actual GPA as a predictor in our regression models. By omitting actual GPA, we would have concluded only that self-exaggeration is associated with strong achievement motivation and improved performance. This conclusion would have overlooked the fact that exaggeration can also reflect a desire to cover one's poor actual performance and, thus, can predict poor future performance. In effect, the reader would be left with half the story.

10.5. Future directions

Our findings highlight an important distinction between self-protection/avoidance and self-enhancement/approach as motivational antecedents to self-evaluation bias. The focus on poor actual GPA as a protection/avoidance motivation, however, was

not free of complication. In the future, an alternative index of this motivation may be warranted, such as fear of negative evaluation (Watson & Friend, 1969) or self-deceptive denial (Paulhus & Reid, 1991).

The protection/enhancement distinction raises several additional questions that should be addressed in future research. First, we argued that persons exaggerate their self-reports in the service of immediate affective benefits. Theoretically, these affective benefits should be coordinated with the motivation underlying the biased self-report. Exaggeration in response to poor performance (protection/avoidance) should protect against negative affect, whereas exaggeration in response to high need for achievement (enhancement/approach) should promote positive affect. Therefore, future research should directly assess affective processes. Second, we found evidence suggesting that exaggeration may have positive implications for performance when it is prompted by an enhancement/approach motivation, rather than a protection/avoidance motivation. Future research should address the possibility, however, that this form of self-evaluation bias is maladaptive in other ways, such as for interpersonal relationships (Paulhus, 1998). Third, our findings were based on a correlational design, and would be strengthened by experimental evidence. Finally, we assumed that students were aware of their actual GPAs. It is possible, however, that students who exaggerated believed that their self-reports were accurate. It may be important to clarify whether students who exaggerate are aware of their inaccuracy, because previous research suggests that bias in self-reports can result either from self-deception or from impression management concerns (Paulhus, 1984).

11. Summary and conclusion

In summary, we sought to address three questions related to the self-enhancement controversy. First, what criteria should researchers use to establish reality? We argued that operational criteria (objective, specific, and verifiable attributes) have certain advantages over the criteria used more often in research on self-evaluation bias.

Second, why would persons exaggerate their self-reports? We argued that self-evaluation bias is multiply motivated. Two persons exhibiting the same level of self-exaggeration may do so for very different reasons. In the present article, we identified a protection/avoidance motivation (the desire to cover one's poor past performance) and an enhancement/approach motivation (the need for achievement) as distinct antecedents to exaggerated self-reports of GPA.

Third, what costs and benefits are associated with the tendency to exaggerate self-reports? We determined that exaggerating one's GPA was associated with poor subsequent academic performance, but that this was due to the strong association between exaggeration and poor past performance. Once the effect of past performance was controlled, exaggeration was associated with positive subsequent performance. In this case, exaggeration primarily reflected high need for achievement (an enhancement/approach motivation). Thus, the relation between self-evaluation bias and positive or negative outcomes appears to depend on the motivational factors that underlie it.

References

- Alicke, M. D. (1985). Global self-evaluation as determined by the desirability and controllability of trait adjectives. *Journal of Personality and Social Psychology*, *49*, 1621–1630.
- Atkinson, J. W., & Feather, N. T. (1966). *A theory of achievement motivation*. New York: Wiley.
- Baumeister, R. F., Tice, D. M., & Hutton, D. G. (1989). Self-presentational motivations and personality differences in self-esteem. *Journal of Personality*, *57*, 547–579.
- Blanton, H., Buunk, B. P., Gibbons, F. X., & Kuyper, H. (1999). When better-than-others compare upward: Choice of comparison and comparative evaluation as independent predictors of academic performance. *Journal of Personality and Social Psychology*, *76*, 420–430.
- Brown, J. D. (1986). Evaluations of self and others: Self-enhancement biases in social judgments. *Social Cognition*, *4*, 353–376.
- Campbell, D. T., & Kenny, D. A. (1999). *A primer on regression artifacts*. New York: Guilford Press.
- Campbell, J. D. (1986). Similarity and uniqueness: The effects of attribute type, relevance, and individual differences in self-esteem and depression. *Journal of Personality and Social Psychology*, *50*, 281–294.
- Colvin, C. R., & Block, J. (1994). Do positive illusions foster mental health? An examination of the Taylor and Brown formulation. *Psychological Bulletin*, *116*, 3–20.
- Colvin, C. R., Block, J., & Funder, D. C. (1995). Overly positive evaluations and personality: Negative implications for mental health. *Journal of Personality and Social Psychology*, *68*, 1152–1162.
- Colvin, C. R., Block, J., & Funder, D. C. (1996). Psychometric truths in the absence of psychological meaning: A reply to Zuckerman and Knee. *Journal of Personality and Social Psychology*, *70*, 1252–1255.
- Cronbach, L. J., & Furby, L. (1970). How should we measure “change”—Or should we? *Psychological Bulletin*, *74*, 68–80.
- Dunning, D., Meyerowitz, J. A., & Holzberg, A. (1989). Ambiguity and self-evaluation: The role of idiosyncratic trait definitions in self-serving assessments of ability. *Journal of Personality and Social Psychology*, *57*, 1082–1090.
- Elliot, A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, *72*, 218–232.
- Elliot, A. J., & McGregor, H. A. (1999). Test anxiety and the hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, *76*, 628–644.
- Elliot, A. J., Sheldon, K. M., & Church, M. A. (1997). Avoidance personal goals and subjective well-being. *Personality and Social Psychology Bulletin*, *23*, 915–927.
- Fineman, S. (1977). The achievement motive construct and its measurement. Where are we now? *British Journal of Psychology*, *68*, 1–22.
- Fiske, D. W. (1973). Can a personality construct be validated empirically? *Psychological Bulletin*, *80*, 89–92.
- Gibbons, F. X. (1986). Social comparison and depression: Company’s effect on misery. *Journal of Personality and Social Psychology*, *51*, 140–149.
- Harper, F. B. W. (1975). The validity of some alternative measurements of achievement motivation. *Educational and Psychological Measurement*, *35*, 905–909.
- Hayes, A. G., & Dunning, D. (1997). Construal processes and trait ambiguity: Implications for self-peer agreement in personality judgment. *Journal of Personality and Social Psychology*, *72*, 664–677.
- Higgins, E. T. (1999). Beyond pleasure and pain. *American Psychologist*, *52*, 1280–1300.
- Jackson, D. N. (1984). *Personality research form manual*. Port Huron, MI: Research Psychologists Press.
- Jahoda, M. (1958). *Current concepts of positive mental health*. New York: Basic Books.
- John, O. P., & Robins, R. W. (1994). Accuracy and bias in self-perception: The role of individual differences in self-enhancement and narcissism. *Journal of Personality and Social Psychology*, *66*, 206–219.
- Krueger, J., & Mueller, R. A. (2002). Unskilled, unaware, or both? The better-than-average heuristic and statistical regression predict errors in estimates of own performance. *Journal of Personality and Social Psychology*, *82*, 180–188.
- Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one’s own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, *77*, 1121–1134.

- McClelland, D. C. (1985). How motives, skills, and values determine what people do. *American Psychologist*, *40*, 812–825.
- Murray, H. A. (1938). *Explorations in personality*. New York: Oxford University Press.
- Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology*, *46*, 598–609.
- Paulhus, D. L. (1998). Interpersonal and intrapsychic adaptiveness of trait self-enhancement: A mixed blessing? *Journal of Personality and Social Psychology*, *74*, 1197–1208.
- Paulhus, D. L., & John, O. P. (1998). Egoistic and moralistic biases in self-perception: The interplay of self-deceptive styles with basic traits and motives. *Journal of Personality*, *66*, 1025–1060.
- Paulhus, D. L., & Reid, D. B. (1991). Enhancement and denial in socially desirable responding. *Journal of Personality and Social Psychology*, *60*, 307–317.
- Rhodewalt, F. T., Morf, C., Hazlett, S., & Fairchild, M. (1991). Self-handicapping: The role of discounting and argumentation in the preservation of self-esteem. *Journal of Personality and Social Psychology*, *61*, 122–131.
- Robins, R. W., & Beer, J. S. (2001). Positive illusions about the self: Short-term benefits and long-term costs. *Journal of Personality and Social Psychology*, *80*, 340–352.
- Robins, R. W., & John, O. P. (1997). The quest for self-insight: Theory and research on the accuracy of self-perceptions. In R. Hogan, J. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 649–679). New York: Academic Press.
- Rogosa, D. R., & Willett, J. B. (1983). Demonstrating the reliability of the difference score in the measurement of change. *Journal of Educational Measurement*, *20*, 335–343.
- Rogers, C. R. (1951). *Client-centered therapy: Its current practice, implications, and theory*. Boston: Houghton Mifflin.
- Suls, J., & Fletcher, B. (1985). The relative efficacy of avoidant and nonavoidant coping strategies: A meta-analysis. *Health Psychology*, *4*, 249–288.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, *103*, 193–210.
- Taylor, S. E., & Brown, J. D. (1994). Positive illusions and well-being revisited: Separating fact from fiction. *Psychological Bulletin*, *116*, 21–27.
- Tice, D. M. (1991). Esteem protection or enhancement? Self-handicapping motives and attributions differ by trait self-esteem. *Journal of Personality and Social Psychology*, *60*, 711–725.
- Tzelgov, J., & Henik, A. (1991). Suppression situations in psychological research: Definitions, implications, and applications. *Psychological Bulletin*, *109*, 524–536.
- Watson, D., & Friend, R. (1969). Measurement of social-evaluative anxiety. *Journal of Consulting and Clinical Psychology*, *33*, 448–457.