

Perceived Competence Moderates the Relation Between Performance-Approach and Performance-Avoidance Goals

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In the present research, we conducted 4 studies designed to examine the hypothesis that perceived competence moderates the relation between performance-approach and performance-avoidance goals. Each study yielded supportive data, indicating that the correlation between the 2 goals is lower when perceived competence is high. This pattern was observed at the between- and within-subject level of analysis, with correlational and experimental methods and using both standard and novel achievement goal assessments, multiple operationalizations of perceived competence, and several different types of focal tasks. The findings from this research contribute to the achievement goal literature on theoretical, applied, and methodological fronts and highlight the importance of and need for additional empirical work in this area.

Keywords: achievement goals, perceived competence, performance-approach, performance-avoidance

For the past 3 decades, achievement goals have received considerable attention in the study of motivation in educational psychology. Achievement goals represent the purpose or aim of competence-relevant behavior (Elliot, 1999; Maehr, 1983). Originally, researchers distinguished between two types of achievement goals: *mastery goals* that focus on developing competence through task mastery and *performance goals* that focus on demonstrating competence relative to others (Dweck, 1986; Maehr, 1983; Nicholls, 1984). In the mid-to-late 1990s, this dichotomous conceptualization of achievement goals was extended to a trichotomous and then a 2×2 model (Elliot, 1999; Elliot & Harackiewicz, 1996; see also Pintrich, 2000) grounded in two independent components of competence. In these models, the first component, the *definition* of competence (i.e., the standard used to evaluate competence), is viewed as the core of the mastery-performance goal distinction. The second component, the *valence* of competence, indicates whether the focus is on *approaching* competence or *avoiding* incompetence. Fully crossing the mastery-performance and approach-avoidance distinctions leads to four different types

of achievement goals: mastery-approach (focused on attaining task-based or intrapersonal competence), performance-approach (focused on attaining normative competence), mastery-avoidance (focused on avoiding task-based or intrapersonal incompetence), and performance-avoidance (focused on avoiding normative incompetence).¹

The initial impetus for extending the dichotomous model of achievement goals was to bifurcate performance-based goals in terms of approach and avoidance (Elliot & Harackiewicz, 1996). Accumulated evidence has shown that separating performance-approach and performance-avoidance goals increases the predictive and explanatory power of the achievement goal approach to achievement motivation. New experimental and survey research, as well as reanalyses of extant data, have clearly shown that the two goals are linked to different antecedents and consequences. Performance-approach goals have been linked to a number of positive processes and outcomes (e.g., high effort, high persistence, high level of aspiration, high academic performance), while performance-avoidance goals have been linked to a number of negative processes and outcomes (e.g., disorganized study strategies, high test anxiety, low academic performance, low intrinsic motivation; for reviews, see Darnon, Butera, Mugny, Quiamzade, & Hulleman, 2009; Hulleman, Schragger, Bodmann, & Harackiewicz, 2010; Kaplan & Maehr, 2007; Meece, Anderman, & Anderman, 2006; Murayama, Elliot, & Friedman, in press).

Recently, achievement goal researchers have begun to take note of an interesting feature of performance-approach and perfor-

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¹ Both conceptually and operationally, the performance-approach and performance-avoidance goals as considered herein are identical to what Elliot, Murayama, and Pekrun (2011) have recently called “other-approach” and “other-avoidance” goals, respectively.

mance-avoidance goals: The two goals often exhibit a moderate to high positive correlation (Bong, 2009; Duda, 2005; Murayama, Elliot, & Yamagata, 2011; Roeser, 2004; Urdan & Mestas, 2006). In other words, studies have shown that the more individuals adopt performance-approach goals, the more they adopt performance-avoidance goals as well. To give a few examples, in the development of the 2 × 2 Achievement Goal Questionnaire for Sport, the correlation between performance-approach and performance-avoidance goals was $r = .54$ (Conroy, Elliot, & Hofer, 2003). In the development of the revised 2 × 2 Achievement Goal Questionnaire for academics, Elliot and Murayama (2008) reported $r = .68$ for the performance-approach and performance-avoidance goal relation. In a qualitative analysis of performance-based goals, Urdan and Mestas (2006) found that students often reported approach reasons for pursuing avoidance goals and avoidance reasons for pursuing approach goals. These examples suggest that there is considerable overlap among performance-approach and performance-avoidance goals. Although mastery-approach and mastery-avoidance goals also tend to be positively correlated, their interrelation is typically not as strong as that for performance-approach and performance-avoidance goals (Elliot & McGregor, 2001; Sideridis, 2008; Wang, Biddle, & Elliot, 2007), and furthermore, the approach-avoidance distinction has received far less attention for mastery-based, relative to performance-based, goals. Accordingly, our primary focus is on performance-approach and performance-avoidance goals herein.

It is critical to emphasize that this high positive correlation does not mean that performance-approach and performance-avoidance goals are inseparable constructs. Psychometric analyses using both exploratory and confirmatory factor analysis have clearly supported the separation of the two goals, despite their moderate to high positive association (Day, Radosevich, & Chasteen, 2003; Finney, Pieper, & Barron, 2004; Murayama, Zhou, & Nesbit, 2009; Shih, 2005; Sideridis, 2006; Tanaka & Yamauchi, 2001; Zweig & Webster, 2004; for extensive discussion of this point, see Murayama et al., 2011). Empirical have data also shown that at least part of this positive correlation is attributable to semantic redundancy in item wording (i.e., response bias; Murayama et al., 2011). Furthermore, the correlation between performance-approach and performance-avoidance goals has varied considerably across studies. In published studies that have reported the correlation between the two goals, the association has ranged from $r = .08$ (Senko & Harackiewicz, 2005, Study 1) to $r = .93$ (Fryer & Elliot, 2007, Study 1). In a recent meta-analysis, Hulleman et al. (2010) found that the mean correlation between performance-approach and performance-avoidance goals was $r = .40$, but also that there was substantial variability in this value across existing studies. In sum, although performance-approach and performance-avoidance goals represent separate achievement goal constructs, they often share considerable variance, and this moderate to high positive correlation is of interest for both theoretical and practical reasons.

From a theoretical perspective, approach and avoidance are fundamental motivational tendencies that humans share with animate life across phylogeny (Elliot & Covington, 2001; Schneirla, 1959). These tendencies are widely thought to have distinct biological and physiological bases, suggesting that approach and avoidance motivation can be independent (Cacioppo & Berntson, 1994). At the behavioral (i.e., directional) level, approach and

avoidance would appear to be mutually antagonistic, leading some to posit that approach and avoidance motivation represent reciprocal inhibitory processes (e.g., Atkinson, 1957; N. E. Miller & Dollard, 1941). Empirical data on a variety of different constructs are consistent with these views, as many find weak negative or positive correlations or rather substantial negative associations among positively and negatively valenced variables such as the need for achievement/fear of failure (Atkinson, 1957), extraversion/neuroticism (McCrae & Costa, 1987), behavioral activation/behavioral inhibition sensitivity (Gray & McNaughton, 1996), approach/avoidance temperament (Elliot & Thrash, 2010), and positive/negative affect (Diener & Emmons, 1984). The main type of construct that appears to deviate from this general pattern is the goal construct. Studies of various types of goals, not only within but also beyond the achievement domain, have found moderate and sometimes even high positive correlations between approach and avoidance goal variables (see especially, work on social goals: Elliot, Gable, & Mapes, 2006; Gable, 2006; Mouratidis & Sideridis, 2009; Ryan & Shim, 2006, 2008). It seems that obtaining a future positive outcome and avoiding a future negative outcome can sometimes be construed quite similarly (e.g., as “opposite sides of the same coin”) and can become commingled in goal pursuit. Little is known about when appetitive and aversive goal constructs become more or less coactivated, and we focus on this issue with regard to performance-approach and performance-avoidance goals in the present research.

From a practical perspective, the high correlation between performance-approach and performance-avoidance goals suggests that the two goals can easily become coactivated in classroom settings. Thus, if a teacher highlights (directly or indirectly) the pursuit of performance-approach goals in a classroom, many students would likely adopt performance-avoidance goals as well as performance-approach goals (Brophy, 2005; Roeser, 2004; Urdan & Mestas, 2006). If so, it is possible that any beneficial implications of performance-approach goal pursuit would be minimized, if not overridden altogether, by the inimical implications of pursuing performance-avoidance goals. This highlights the importance of acquiring a greater understanding of the nature of the relationship between performance-approach and performance-avoidance goals (see the General Discussion for more on the simultaneous pursuit of performance-approach and performance-avoidance goals and implications therein).

Perceived Competence as a Moderator of the Performance-Approach and Performance-Avoidance Goal Relationship

One approach that can shed light on the high positive correlation between performance-approach and performance-avoidance goals is consideration of a factor or factors that may moderate the relation between the two variables. As noted by Zanna and Fazio (1982), “first generation” research questions focus on whether there is an association between two variables, and once established, the “second generation” research question concerning when or under what conditions the variables are strongly/weakly related sometimes becomes salient. The shift to this second generation question is often precipitated by a narrative or empirical meta-analysis indicating heterogeneous relations between two variables in the extant literature. This has led researchers to search for

contextual and/or individual difference moderators of the relation in question. Examples of this progression abound and include work on positive/negative affect (Reich, Zautra, & Davis, 2003; Zautra, Reich, Davis, Potter, & Nicolson, 2000), implicit/explicit attitudes (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005; Karpinski, Steinman, & Hilton, 2005), and implicit/explicit motives (Thrash & Elliot, 2002; Thrash, Elliot, & Schultheiss, 2007). This moderation research has typically provided enhanced insight into the nature of the constructs in question and has facilitated progress in the literature at hand. As noted earlier, Hulleman et al. (2010) have reported meta-analytic data indicating that the relation between performance-approach and performance-avoidance goals in the existing data are heterogeneous, and we believe examination of the reason(s) for this heterogeneity could provide valuable insight into the nature and working of these two goal constructs.

In the present research, we targeted perceived competence as a candidate moderator of the relation between performance-approach and performance-avoidance goals. Perceived competence represents individuals' confidence that they have ability or will be able to accomplish the task at hand, and this variable has been a central construct in the achievement motivation literature for decades (Atkinson, 1957; Bandura, 1977; Covington, 1992; Dweck, 1986; Eccles & Wigfield, 2002; Harter, 1989; Lewin, Dembo, Festinger, & Sears, 1944; Marsh & Shavelson, 1985; Schunk & Pajares, 2005; Weiner, 1972). Research has demonstrated that perceived competence predicts academic achievement and facilitates an active commitment to competence (Marsh, Kong, & Hau, 2000; Schunk, 1991). Individuals with higher perceived competence experience more positive emotions during task engagement (Pekrun & Stephens, 2010; Weiner, 1985), focus more on positive and less on negative possibilities (Atkinson, 1964; Elliot & Church, 1997), and evidence more resilience and persistence following failure feedback (Cervone & Peake, 1986; Chemers, Hu, & Garcia, 2001; Multon, Brown, & Lent, 1991).

In achievement situations, especially those in which normative standards are utilized, both success and failure are salient possibilities (Atkinson, 1957; Nicholls, 1984; Pulfrey, Buchs, & Butera, 2011). Perceived competence is an important factor influencing the relative salience of positive and negative possibilities (Bandura, 1986; Covington, 1992; Schunk & Pajares, 2005). When perceptions of competence are high, the positive possibility of success is particularly salient, whereas when perceptions of competence are low, the negative possibility of failure is particularly salient (Atkinson & Feather, 1966; Darnon, Harackiewicz, Butera, Mugny, & Quiamzade, 2007; Elliot & Church, 1997; Lewin et al., 1944). Individuals bolstered by high competence perceptions would seem able to commit to approaching success relatively unencumbered by a concern about (and commitment to avoiding) failure, as they would be quite confident that they would be able to succeed. In the absence of high competence perceptions, individuals would be less confident that they would be able to succeed and would therefore likely focus on the possibility of failure and commit to avoiding it. This need not be done in the absence of a commitment to success, but striving to approach success would likely be commingled with striving to avoid failure in this instance. Stated in terms of performance-approach and performance-avoidance goals per se, when perceived competence is high, individuals can pursue performance-approach goals without necessarily pursuing performance-avoidance goals, but when perceived competence is low, individuals likely

pursue performance-approach and performance-avoidance goals together. Accordingly, perceived competence should moderate the correlation between performance-approach and performance-avoidance goals, such that the correlation is lowest at high levels of perceived competence and is highest at low levels of perceived competence. This was our primary prediction in the present research.

Overview of the Present Research

In the present research, we conducted four studies designed to test the moderating role of perceived competence in the performance-approach/performance-avoidance goal relation. We used a variety of methods and measures across the four studies in the interest of acquiring converging evidence on our focal hypothesis.

In Study 1, we examined whether general and specific indicators of perceived competence moderated the correlation between students' performance-approach and performance-avoidance goals for an upcoming exam. Assessment of achievement goals in a classroom setting is the commonly used approach in the achievement goal literature and, therefore, provides the most straightforward test of our hypothesis.

In Study 2, we focused on the within-subject correlation between performance-approach and performance-avoidance goals, rather than the between-subjects correlation examined in Study 1. Within-subject analysis addresses intraindividual variability of psychological constructs across situations or time points (Molenaar & Campbell, 2009; Nesselrode, Gerstorf, Hardy, & Ram, 2007) and, importantly, can produce very different results from those obtained with more conventional between-subject analysis (e.g., Borkeau & Ostendorf, 1998; Hooker, Nesselrode, Nesselrode, & Lerner, 1987). Accordingly, we assessed general perceived competence and general self-efficacy, had participants report their performance-approach and performance-avoidance goals with regard to five different situations, and computed within-subject correlations across the two goals.

In Studies 3 and 4, we utilized an experimental design to manipulate perceived competence for an upcoming task. This design allowed us to examine the causal effect of perceived competence on the correlation between performance-approach and performance-avoidance goals. In Study 3 we utilized the standard approach to assessing achievement goals; in Study 4 we utilized a more novel approach to achievement goal assessment.

In each of the four studies, prior to reporting primary results, we report the overall correlation between performance-approach and performance-avoidance goals. In addition, individuals sometimes provided the same response for all items on a questionnaire, and for many if not most of these persons, this response pattern indicates a lack of investment in and attention to the assessment. This response pattern is known to inflate correlations among variables (Cheung & Chan, 2002). As such, in the preliminary results section of each between-subjects study, we also report the overall correlation between performance-approach and performance-avoidance goals with individuals who provided the same response for each item across the two goal measures removed (these respondents were retained in the primary analyses).

Study 1

Participants

Two hundred twenty-five undergraduates (75 men, 150 women; mean age = 19.4 years) enrolled in an introductory-level psychology course at a U.S. university participated in the study in exchange for extra course credit. Participant ethnicity was as follows: 9 African American, 36 Asian, 157 Caucasian, 11 Hispanic, 10 “other,” and 2 unspecified. The class was conducted in lecture format.

Procedure

Participants completed a measure of general perceived competence during the first week of the semester. Approximately one month later, and one week before their first examination, students’ competence expectancy and achievement goals for the exam were measured. For all assessments, participants were informed that their responses would remain confidential and would in no way influence their grade.

Measures

General perceived competence. The Perceived Competence subscale of the Multidimensional Self-Esteem Inventory (O’Brien & Epstein, 1988), which consists of nine items, was used to measure general perceived competence. Participants responded on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale, and responses were averaged to form the general perceived competence index (Cronbach’s $\alpha = .86$).²

Competence expectancy. A two-item scale (Elliot & Church, 1997) was used to measure students’ competence expectancy for the exam (sample item: “I expect to do well on this exam”). Participants responded on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale, and responses were averaged to form the competence expectancy index (Cronbach’s $\alpha = .90$).

Achievement goals. The revised 2×2 Achievement Goal Questionnaire (AGQ-R; Elliot & Murayama, 2008) was used to measure performance-approach (three items) and performance-avoidance (three items) goals for the upcoming exam. A sample performance-approach goal item is “My goal is to perform better than the other students.” A sample performance-avoidance goal item is “My goal is to avoid performing poorly compared with others.” Participants responded on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. Responses were averaged to form the performance-approach and performance-avoidance goals indices (Cronbach’s α s = .96 for both goals).

Results and Discussion

Preliminary results. Table 1 displays descriptive statistics for the variables in the study. The overall correlation between performance-approach and performance-avoidance goals was $r = .69$, $p < .01$. This correlation was $r = .51$, $p < .01$, when participants who provided the same response for each achievement goal item ($n = 66$) were omitted.

Moderation results. We used Rosenthal and Rosnow’s (1991) effect size comparison method to examine whether the performance-approach and performance-avoidance goal correla-

tion varied at different levels of perceived competence. Specifically, first the perceived competence variables were divided into high and low groups via median split. Next, the Pearson product-moment correlation for performance-approach and performance-avoidance goals was calculated for each group and transformed to Fisher’s z scores. The difference of the Fisher’s z scores between the two groups was then divided by the square root of the sum of the reciprocal of the degrees of freedom to obtain a final z score. The p value associated with the z score indicates whether the correlation differs significantly across the two groups (see Rosenthal & Rosnow, 1991, for details on this data-analytic approach).³

The results indicated that at a high level of general perceived competence, the correlation between performance-approach and performance-avoidance goals was $r = .62$, $p < .01$, whereas at a low level, the correlation was $r = .80$, $p < .01$. The z score of the difference between the low and high groups was 2.78, $p < .01$. In similar fashion, the results indicated that at a low level of competence expectancy, the correlation between performance-approach and performance-avoidance goals was $r = .78$, whereas at a high level, the correlation was $r = .61$. The z score of the difference between the low and high groups was 2.48, $p < .01$. In sum, both sets of analyses supported our hypothesis that perceived competence moderates the relation between performance-approach and performance-avoidance goals, such that the association is lower when perceived competence is higher.

Study 2

In Study 1, we used a conventional between-subjects approach to test our moderation hypothesis; in Study 2, we sought to conceptually replicate Study 1 using within-subject data. Specifically, we assessed participants’ performance-based goals across five different achievement domains and examined the relation between perceived competence and the correlation between performance-approach and performance-avoidance goals. We hypothesized that for those with high perceived competence, the correlation between the two performance-based goals would be lower.

Participants

One hundred two participants (26 men, 75 women, and 1 unspecified; mean age = 36.0) were recruited via Amazon.com’s Mechanical Turk, an Internet survey system. Participant ethnicity

² We also assessed general perceived competence with a second measure that we developed ourselves. This measure was composed of four face-valid items (e.g., “I do well at most things I try”), and participants responded on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale. Responses were averaged to form a second general perceived competence index (Cronbach’s $\alpha = .86$). Scores from this measure correlated $r = .73$ with those from the Multidimensional Self-Esteem Inventory, and the results using this new measure were the same as those reported in the text for the Multidimensional Self-Esteem Inventory.

³ We used a group-based (rather than continuous variable) approach to analyze the data in this study because there is no established way to statistically test moderation of a correlation coefficient (as opposed to a regression coefficient; see Arnold, 1982) with a continuous moderator variable.

Table 1
Descriptive Statistics for Performance-Approach and Performance-Avoidance Goals in Studies 1–4

Study and variable	<i>M</i>	<i>SD</i>	Observed range
Study 1			
General perceived competence	3.62	0.61	1.67–4.89
Competence expectancy	5.37	1.17	1.00–7.00
Performance-approach goals	5.38	1.50	1.00–7.00
Performance-avoidance goals	5.17	1.59	1.00–7.00
Study 2			
General perceived competence	3.74	0.73	1.56–5.00
General self-efficacy	3.88	0.71	1.50–5.00
Performance-approach goals (across scenarios)	4.85	1.39	1.00–7.00
Performance-avoidance goals (across scenarios)	4.30	1.42	1.00–7.00
Study 3			
Perceived competence	5.00	2.10	1.00–7.00
Performance-approach goals	4.24	1.70	1.00–6.67
Performance-avoidance goals	3.85	1.75	1.00–6.67
Study 4			
Perceived competence	4.29	2.08	1.00–7.00
Performance-approach goals (goal grid)	3.94	1.95	1.00–7.00
Performance-avoidance goals (goal grid)	4.02	1.90	1.00–7.00

was as follows: 5 African American, 1 Asian, 89 Caucasian, 2 Hispanic, 4 “other,” and 1 unspecified. Mechanical Turk has been shown to produce valid data comparable to that collected under more controlled (e.g., laboratory) conditions (Buhrmester, Kwang, & Gosling, 2011).

Procedure

The study was described to participants as consisting of two separate parts: The first part would involve completing questions about their general beliefs, and the second part would involve completing questions about their goals in different situations. In the first part of the study, participants’ general perceived competence and general self-efficacy were assessed. General self-efficacy represents one’s belief in one’s overall competence to succeed across a wide variety of achievement situations and is analogous to perceived competence in this context (see Schwarzer & Jerusalem, 1995).

In the second part of the study, participants were asked to describe a recent experience in each of five different achievement domains (school/learning, sport/exercise, work/volunteer work, hobby/extracurricular activity, and a social situation; see Figure 1) and to report when the experience occurred. For each domain, after identifying and reporting on the experience, participants reported their performance-approach and performance-avoidance goals for that experience (see Murayama et al., 2011).

Measures

General perceived competence. As in Study 1, general perceived competence was assessed with the Multidimensional Self-Esteem Inventory (Cronbach’s $\alpha = .90$).

General self-efficacy. The eight-item New General Self-Efficacy Scale (Chen, Gully, & Eden, 2001) was used to assess general self-efficacy (sample item: “I will be able to achieve most of the goals that I have set for myself”). Participants responded on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale, and responses

were averaged to form the general self-efficacy index (Cronbach’s $\alpha = .93$).

Achievement goals. As in Study 1, the AGQ-R was used to assess performance-approach and performance-avoidance goals. However, only one performance-approach goal item and one performance-avoidance goal item were used for each domain to decrease the awkwardness of filling out the same set of items five consecutive times. Specifically, we selected one item for each construct based on the factor loading data from a previous study (Elliot & Murayama, 2008), and we used this pair of items across all of the domains (“My aim was to perform well relative to others” for performance-approach goals, and “My aim was to avoid doing worse than others” for performance-avoidance goals). A Pearson product-moment correlation for performance-approach and performance-avoidance goals was computed for each individual, using domain as the unit of analysis.

Results and Discussion

Preliminary results. Table 1 displays descriptive statistics for the variables in the study. The overall mean correlation between performance-approach and performance-avoidance goals was $r = .56, p < .01$. Participants who provided the same response for all items could not be included in within-subject analyses. Accordingly, eight participants who put the same response for each achievement goal item could not be included in this analysis or the next analyses.

Moderation results. We computed Pearson product-moment correlations to examine whether the performance-approach and performance-avoidance goal correlation varied across levels of perceived competence. The analyses revealed that both general perceived competence and general self-efficacy were negatively associated with the performance-approach and performance-avoidance goal correlation ($r = -.21, p < .05$, and $r = -.22, p < .05$, respectively). Thus, the correlation between performance-approach and performance-avoidance goals was lower when per-

<u>School/learning</u>
Examples: "Studying for an English Literature exam," "Studying for a test"
<u>Sport/exercise</u>
Examples: "I went jogging today," "Tried speed walking"
<u>Work/volunteer work</u>
Examples: "I went to work today," "I volunteered at the church I attended"
<u>Hobby/extracurricular activity</u>
Examples: "I played poker online," "Cooking a special dinner"
<u>Social situation</u>
Examples: "Going to the bar to meet females," "Getting together with my husband's family"

Figure 1. Achievement domains and examples reported by participants in Study 2.

ceived competence was higher. These results replicate those of Study 1 but at a within-subject level of analysis.

Study 3

The aim of Study 3 was to examine the relation between perceived competence and the correlation between performance-approach and performance-avoidance goals using an experimental design, thereby affording a more definitive statement regarding the causal relations among the focal variables. We manipulated participants' level of perceived competence by varying the difficulty level of a practice task (easy, moderate, and difficult) and examined the difference in the performance-approach and performance-avoidance goal correlations across experimental conditions. We hypothesized that the correlation between performance-approach and performance-avoidance goals would be lower in the easy condition (i.e., high perceived competence) in comparison to the difficult condition (i.e., low perceived competence). A moderate perceived competence condition was included to test the threshold at which the two performance-based goals become highly correlated. On one hand, a moderate level of perceived competence may be sufficient to quell doubts and concerns about failure, allowing performance-approach goal pursuit to be relatively free of performance-avoidance goal pursuit. On the other hand, a moderate level of perceived competence may prompt enough doubts and concerns about incompetence that performance-avoidance goal pursuit is highly likely. The former possibility would lead to a relatively low correlation between the two goals in the moderate perceived competence condition, much like that expected in the high perceived competence condition, whereas the latter possibility would lead to a relatively high correlation between the two goals in the moderate perceived competence condition, much like that expected in the low perceived competence condition. We did not make an a priori prediction for the moderate perceived competence condition.

Participants

Fifty-one undergraduates (19 men and 32 women; mean age = 19.9) from a U.S. university participated in the experiment in

return for extra course credit. Participant ethnicity was as follows: 5 African American, 9 Asian, 33 Caucasian, 2 Hispanic, and 2 "other."

Procedure

Participants were randomly assigned to one of three experimental conditions based on task difficulty: easy ($n = 17$), moderate ($n = 17$), and difficult ($n = 17$). Task difficulty was determined on the basis of pilot testing with a separate group of individuals. Participants were told that the study consisted of three parts: taking a practice puzzle test, completing some questionnaires, and then taking a real puzzle test. The puzzle test was described as a test of abstract thinking. It consisted of 10 items from the Raven Progressive Matrices (Raven, 1938), which participants were given 10 min to complete.

An experimenter blind to experimental hypothesis and participants' experimental condition gave participants the practice task and waited for 10 min to elapse. Then the experimenter instructed participants to stop and to complete several questions. The questions contained a perceived competence manipulation check, as well as items regarding participants' performance-approach and performance-avoidance goals for the upcoming task. Upon completion of the questions, participants were informed that the experiment was over and that they did not actually have to complete the real test.

Measures and Materials

Achievement goals. As in Studies 1 and 2, performance-approach and performance-avoidance goals were assessed with the AGQ-R (Cronbach's $\alpha_s = .92$ and $\alpha = .94$, respectively).

Manipulation check. A single perceived competence item was used as a manipulation check. Participants were asked to report how they thought they did on the practice test on a 1 (*very poorly*) to 7 (*very well*) scale.

Achievement task. Ten Raven Progressive Matrices were used for the achievement task. Each item consists of a 3×3 matrix

with one missing piece. Participants were given eight possible alternatives for completing the matrix, only one of which was correct.

Results and Discussion

Preliminary results. Table 1 displays the descriptive statistics for the variables in the study. The overall correlation between performance-approach and performance-avoidance goals was $r = .80$, $p < .01$. This correlation was $r = .70$, $p < .01$, when participants who provided the same response for each achievement goal item ($n = 11$) were omitted.

Manipulation check results. Participants in the easy condition reported the highest perceived competence ($M = 6.82$), followed by participants in the moderate condition ($M = 5.82$) and the difficult condition ($M = 2.35$). A univariate analysis of variance (ANOVA) was conducted with experimental condition as the between-subjects factor and perceived competence as the dependent variable. The ANOVA revealed a significant difference between conditions, $F(2, 48) = 136.86$, $p < .01$. Pairwise Tukey's honestly significant difference (HSD) tests were then conducted. These tests revealed that participants in each of the three experimental conditions reported significantly different levels of perceived competence ($ts > 10.51$, $ps < .01$), indicating that the manipulation was successful.

Moderation results. The performance-approach and performance-avoidance goal correlations for the three experimental conditions were $r(\text{easy}) = .60$, $p < .01$; $r(\text{moderate}) = .94$, $p < .01$; and $r(\text{difficult}) = .92$, $p < .01$. We used Rosenthal and Rosnow's (1991) effect size comparison method to examine whether the correlation between performance-approach and performance-avoidance goals differed across the three conditions. The results indicated that $r(\text{easy})$ was significantly lower than $r(\text{difficult})$, $z = 2.41$, $p < .01$, and that $r(\text{easy})$ was also significantly lower than $r(\text{moderate})$, $z = 2.81$, $p < .01$. The difference between $r(\text{difficult})$ and $r(\text{moderate})$ was not significant, $z = .39$, $p > .69$. In sum, the results supported our hypothesis that perceived competence moderates the relation between performance-approach and performance-avoidance goals, such that the association is lowest when perceived competence is high. Results from the moderate perceived competence condition indicated that the correlation between performance-approach and performance-avoidance goals is more similar to that in the low perceived competence condition than that in the high perceived competence condition.

Study 4

The aim of Study 4 was to again use an experimental design to examine the correlation between performance-approach and performance-avoidance goals but to do so using a novel method of goal assessment. We adapted a grid measure that was developed and validated by Larsen and colleagues as a measure of positive and negative emotions (Larsen & McGraw, 2011; Larsen, Norris, McGraw, Hawley, & Cacioppo, 2009; Norman et al., 2010). The grid measure visually displays all possible response combinations for a pair of items (see Figure 2). It requires participants to compare and contrast a performance-approach item and a performance-avoidance item in reporting their goals, and we thought that

this more involved procedure would help respondents more fully consider both the similarities and differences between the approach and avoidance variants of the two performance-based goals.

Participants

Thirty-eight undergraduates (9 men and 29 women; mean age = 20.0) from a U.S. university participated in the experiment in return for extra course credit. Participants' ethnicity was as follows: 8 Asian, 27 Caucasian, 1 Hispanic, and 2 unspecified.

Procedure and Materials

Participants were randomly assigned to one of three experimental conditions based on task difficulty: easy ($n = 13$), moderate ($n = 12$), and difficult ($n = 13$). The items for the easy and difficult conditions were the same as those used in Study 3; we replaced four items (out of 10) in the moderate condition on the basis of a pilot testing with a separate group of individuals. This modification was made because the perceived competence of participants in the moderate condition in Study 3 was still high (5.82 out of 7), and our intention was to increase the difficulty of the moderate condition so that it would be closer to the midpoint of the perceived competence scale. The experimental procedure was the same as that used in Study 3.

Performance-approach and performance-avoidance goals were assessed with a newly constructed achievement goal grid measure (see Figure 2), based on Larsen et al.'s (2009) evaluative space grid measure. For each item of the measure, participants were provided with a 7×7 matrix on which they simultaneously responded to two goal items, one presented on the x -axis and the other presented on the y -axis. Both goal items were accompanied by a 1 (*not true of me at all*) to 7 (*extremely true of me*) scale, and participants responded to the two items by making a single mark in the matrix. The three performance-approach and three performance-avoidance goal items from the AGQ-R were used; each goal grid item paired one performance-approach goal item with the performance-avoidance goal item that possessed the most similar wording. Responses were averaged to form the performance-approach and performance-avoidance goal indices (Cronbach's α s = .95 and .91, respectively).

Results and Discussion

Preliminary results. Table 1 displays the descriptive statistics for the variables in the study. The overall correlation between performance-approach and performance-avoidance goals was $r = .51$, $p < .01$. This correlation was $r = .00$ when participants who provided the same response for each achievement goal item ($n = 11$) were omitted.

Manipulation check results. Participants in the easy condition reported the highest perceived competence ($M = 6.54$), followed by participants in the moderate condition ($M = 4.33$) and the difficult condition ($M = 2.00$). A univariate ANOVA was conducted with experimental condition as the between-subjects factor and perceived competence as the dependent variable. The

		Goal A					
		Not true of me at all		Moderately true of me		Extremely true of me	
Goal B	Not true of me at all						
	Moderately true of me						
	Extremely true of me						

Figure 2. The following instructions for the achievement goal grid measure shown here were given in Study 4: “We would like you to report on your goals for the upcoming puzzle task. You will be given several different ‘goal grids’ and asked to indicate your response on each. Each goal grid has two goals on it—one at the top of the grid, and one to the left of the grid. The grid asks you two questions: along the top it asks ‘How much are you pursuing GOAL A?’ from ‘Not true of me at all’ at the left to ‘Extremely true of me’ at the right. Along the side it asks ‘How much are you pursuing GOAL B?’ from ‘Not true of me at all’ at the top to ‘Extremely true of me’ at the bottom. To answer, you mark ONE cell in the grid that best described your pursuit of the two goals. So, if you are definitely pursuing GOAL A, but not at all pursuing GOAL B, you would mark the cell at the top right edge. The more you are pursuing GOAL A, the farther to the right you should go. On the other hand, if you are definitely pursuing GOAL B, but not at all pursuing GOAL A, you would mark the cell on the bottom left edge. The more you are pursuing GOAL B, the farther down you should go. If you are neither pursuing GOAL A nor GOAL B, mark the cell in the top left. Finally, if you feel that you are pursuing both GOAL A and GOAL B, mark one of the cells in the middle. The cell you select will depend on just how much you are pursuing GOAL A, and how much you are pursuing GOAL B. When answering the questions, please place yourself in whichever cell best describes your goals.”

ANOVA revealed a significant difference between conditions, $F(2, 37) = 90.49, p < .01$. Pairwise Tukey’s HSD tests revealed that participants in each of the three experimental conditions reported significantly different levels of perceived competence ($t_s > 8.88, p_s < .01$), indicating that the manipulation was successful.

Moderation results. The performance-approach and performance-avoidance goal correlations for the three experimental conditions were $r(\text{easy}) = -.01, p = .99$; $r(\text{moderate}) = .84, p < .01$; and $r(\text{difficult}) = .86, p < .01$. We used Rosenthal and Rosnow’s (1991) effect size comparison method to examine whether the correlation between performance-approach and performance-avoidance goals differed across the three conditions. The results

indicated that $r(\text{easy})$ was significantly lower than $r(\text{difficult})$, $z = 2.92, p < .01$, and that $r(\text{easy})$ was also significantly lower than $r(\text{moderate})$, $z = 2.65, p < .01$. The difference between $r(\text{difficult})$ and $r(\text{moderate})$ was not significant, $z = .19, p > .84$. In sum, the results again supported our hypothesis that perceived competence moderates the relation between performance-approach and performance-avoidance goals, such that the association is lower when perceived competence is high relative to low or moderate. In addition, the correlation between the two goals was lower, especially at high level of perceived competence, using the new achievement goal grid measure. As such, this measure would seem a promising candidate for achievement goal measurement in subsequent empirical work.

General Discussion

The results of the present research provide strong support for our hypothesis that perceived competence moderates the relation between performance-approach and performance-avoidance goals. In four studies we demonstrated that the correlation between the two goals is lower when perceived competence is high. We observed this finding with multiple methods and multiple measures, thereby yielding converging empirical evidence. Specifically, we found perceived competence moderation using two different levels of analysis (between-subjects and within-subject), using two different methodological approaches (correlation and experimental manipulation), using two different operationalizations of goals (standard Likert-type scales and novel goal grid matrices), using three different operationalizations of perceived competence (general competence perceptions, specific competence expectancies, and task difficulty), and using three different types of focal tasks (a classroom exam, a puzzle task, and experiences in a variety of achievement domains). Table 2 provides a summary of the central results across the between-subjects studies.

Perceived competence has been considered an important construct in research on achievement goals since the advent of the achievement goal literature. The hypothesized role of perceived competence has shifted over time, however. Initially, perceived competence was construed as a moderator of dichotomous achievement goals effects. Mastery goals were posited to have a positive influence on outcomes regardless of perceived competence level; performance goals were posited to have a (somewhat constrained) positive influence on outcomes when accompanied by high perceived competence and a negative influence on outcomes when accompanied by low perceived competence (Ames, 1992; Dweck, 1986; Nicholls, 1989). Research has yielded decidedly mixed results with regard to this hypothesis, with some studies providing support (Covington & Omelich, 1984; Elliott & Dweck, 1988; Shim & Ryan, 2005) but a majority not providing support (Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Kaplan & Midgley, 1997; Lieberman & Remedios, 2007; R. B. Miller, Behrens, Greene, & Newman, 1993; Sideridis, 2007; for a review, see Midgley, 2002). Perceived competence has also been portrayed as an antecedent of the approach and avoidance components of both performance-based and mastery-based goals, with high perceived competence facilitating appetitive striving and low perceived competence facilitating aversive striving (Elliott & Church, 1997). These premises have received considerable support in the literature (Cury, Elliot, Da Fonseca, & Moller, 2006; Darnon, Butera, et al., 2009; Lopez, 1999; Pajares, Britner, & Valiante, 2000; Spray &

Warburton, 2011; Tanaka, Takehara, & Yamauchi, 2006; Van Yperen & Renkema, 2008). More recently, the initial perceived competence moderator hypothesis has been applied to the trichotomous and 2×2 achievement goals models with the primary focus on performance-approach and performance-avoidance goals. Here, performance-approach goals are viewed as a vulnerability in that they are posited to turn into performance-avoidance goals upon receipt of negative feedback (and accompanying low perceived competence; Brophy, 2005; Midgley, Kaplan, & Middleton, 2001). This goal-switching hypothesis is not supported by the extant data (Fryer & Elliot, 2007; Muis & Edwards, 2009; Senko & Harackiewicz, 2005; Sideridis, 2003; Summers, 2006; Van Yperen, 2006; for a review see Senko, Hulleman, & Harackiewicz, 2011), which instead have indicated that performance-approach goals are quite stable self-regulatory structures.

The present research contributes to this ongoing consideration of the role of perceived competence by documenting that perceived competence moderates the degree to which performance-approach and performance avoidance goals are intercorrelated. Performance-approach goals may be pursued relatively unencumbered by performance-avoidance goals when perceived competence is high, but performance-approach goals are pursued in conjunction with performance-avoidance goals when perceived competence is low (or moderate). These data suggest not that performance-approach goals are abandoned in favor of performance-avoidance goals when competence perceptions are low (or moderate) or task difficulty is encountered but instead that they are accompanied by performance-avoidance goals in such instances. From this standpoint, individuals do not switch from performance-approach to performance-avoidance goals upon doubts or difficulty but instead retain their performance-approach goals and add performance-avoidance goals in a type of multiple goal pursuit (see Barron & Harackiewicz, 2001; Pintrich, 2000) not typically discussed in the achievement goal literature. Of course, the data from the present research are static and, therefore, are only suggestive of this interpretation; future research is needed to examine this possibility in longitudinal fashion. In addition, it should be acknowledged that at extremely low levels of perceived competence, performance-approach goals may indeed be abandoned, either in favor of performance-avoidance goals alone or in favor of a complete divestment from competence altogether. It is unlikely that such processes were operative in the present research, and future work is needed to consider these issues.

We view perceived competence as an important moderator of the performance-approach and performance-avoidance goal relation, but we by no means view it as the only moderator. Other

Table 2
Performance-Approach and Performance-Avoidance Goal Correlations in the Between-Subjects Studies Both Overall and as a Function of Perceived Competence

Study	Overall	Perceived competence level		
		High	Moderate	Low
Study 1	.69			
General perceived competence		.62		.80
Competence expectancy		.61		.78
Study 3	.80	.60	.94	.92
Study 4	.51	-.01	.84	.86

variables, such as preference for consistency, are also worthy of consideration in this regard. Those who are high, relative to low, in preference for consistency have a limited tolerance for cognitive conflict (Cialdini, Trost, & Newsom, 1995) and may therefore be less likely to simultaneously adopt performance-approach and performance-avoidance goals (leading to a lower positive correlation). Conversely, those high, relative to low, in affective synchrony are more likely to experience and be comfortable with mixed emotions (Rafaeli, Rogers, & Revelle, 2007), and such persons may be more open to the coactivation of performance-approach and performance-avoidance goals (leading to a higher positive correlation). In similar fashion, those high, relative to low, in dialectical thinking are more tolerant of ambivalent beliefs (Peng & Nisbett, 1999), and such individuals may be more likely to exhibit high covariation between performance-approach and performance-avoidance goals. East Asians tend to be higher in dialectical thinking than are Caucasians (Hui, Fok, & Bond, 2009), and this may explain why at least in some samples, East Asians show a higher correlation between the two performance-based goals than do their Western counterparts (Murayama, 2003; Zusho, Pintrich, & Cortina, 2005).

Studies 3 and 4 of the present work demonstrated that performance-approach and performance-avoidance goals exhibit a high positive correlation not only at low perceived competence but also at moderate perceived competence. Thus, it appears that even a moderate degree of concern about doing poorly is sufficient to prompt performance-avoidance goals and to lead to a commingling of performance-approach and performance-avoidance goals. It is likely that the move from high perceived competence to moderate and low perceived competence is accompanied by an increased concern about the possibility of failure and that this salient threat prompts individuals to include performance-avoidance goals in their self-regulatory repertoire. The present research did not address the precise mechanism or mechanisms through which perceived competence moderates the relation between performance-approach and performance-avoidance goal pursuit, and subsequent work would do well to focus on this important issue.

In addition, nothing is known at present about the way in which the simultaneous pursuit of performance-approach and performance-avoidance goals takes place, and the literature is equally silent on the consequences of such coactivation for achievement-relevant outcomes. Ideas for commencing work in this area may be gleaned from conceptually related research that is starting to accumulate on attitudinal and affective ambivalence (Cacioppo, Gardner, & Berntson, 1999; Mikulincer, Shaver, Bar-On, & Ein-Dor, 2010; Oceja & Carrera, 2009; Talmi, Dayan, Kiebel, Frith, & Dolan, 2009; Thompson, Zanna, & Griffin, 1995), but at present we can only offer speculation regarding performance-approach and performance-avoidance goals. One possibility is that there is a rapid and consistent shifting between performance-approach and performance-avoidance goal pursuit during task engagement (Horowitz, 2010; Senko et al., 2011). However, based on the evaluative principle "bad is stronger than good" (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001), we suspect that when commitment to a performance-avoidance goal is as strong or stronger than commitment to a performance-approach goal, the performance-avoidance goal will take perceptual-cognitive precedence and will have the predominant influence on processes and outcomes. That is, we think that performance-avoidance goals are

particularly powerful forms of regulation that can co-opt affective and cognitive resources and weaken, if not eliminate or reverse, any positive effects of performance-approach goals. As such, it seems clear that research on this issue should be a high priority on the empirical agenda.

The present work has important implications for classroom practice. Performance-approach goals do not appear to be in danger of turning into performance-avoidance goals, but pursuing such goals does appear to make performance-avoidance goal pursuit more likely, with probable inimical consequences. Therefore, despite the fact that performance-approach goals can have positive effects and can be quite resilient, these goals must be considered a vulnerability—an indirect vulnerability, but a vulnerability nonetheless. Although students high in perceived competence can pursue performance-approach goals without attendant performance-avoidance goals, it is difficult, if not impossible, to keep a majority of students in a classroom feeling competent, especially when competence has a normative denotation (Nicholls, 1989). Accordingly, although we think it would be unwise to dissuade high perceived competence students from pursuing performance-approach goals that emerge of their own accord (Elliot & Moller, 2003), we think it is best to be wary of establishing a performance-approach goal context at the classroom level. Thus, although we approached this applied question from a different angle from that taken by many in the achievement goal literature, we ended up with a similar position—advocating a mastery-approach over a performance-approach emphasis in the classroom (Ames, 1992; Anderman & Midgley, 1997; Darnon, Dompnier, Delmas, Pulfrey, & Butera, 2009; Dweck, 1999; Kaplan & Midgley, 1997; Karabenick, 1994; Maehr, & Midgley, 1996; Meece et al., 2006; Patrick & Ryan, 2008; Ryan, Pintrich, & Midgley, 2001; Turner & Patrick, 2004; Urdan, 1997; Wolters, 2004).

Importantly, the results of the present research provide evidence that some of the positive correlation between performance-approach and performance-avoidance goals witnessed in achievement goal research reflects method variance. This may be seen most clearly in Study 4, in which the goals were assessed using a grid measure that encouraged participants to think carefully about their responses. In this study, the overall correlation between performance-approach and performance-avoidance goals was lower than in any of the other studies that used a standard Likert-type assessment procedure, and for those high in perceived competence, the two goals were actually completely independent of each other. In Study 2, a within-subject approach to goal assessment was used instead of the standard between-subjects approach, and this also seemed to reduce the magnitude of the correlation between performance-approach and performance-avoidance goals to some degree (although this cannot be definitively discerned, given that the focal tasks were also unique). Furthermore, across between-subjects studies, the positive correlation between performance-approach and performance-avoidance goals was noticeably lower when participants who provided the same response for each goal item were omitted. Although some of these respondents may have provided veridical data, it is likely the case that for many these data simply reflected a lack of investment in the assessment procedure. Other common response sets (e.g., acquiescence) are almost certainly present in our data as well,

most of which would likely inflate the magnitude of the positive correlation (Campbell & Fiske, 1959; Green, Salovey, & Truax, 1999). In short, in any research using the performance-approach and performance-avoidance goal constructs, it is important to attend to factors that may artificially enhance the interrelation among the two goals. Aside from the aforementioned considerations, other procedures such as providing clear instructions about the meaning of goal commitment, incorporating filler items, limiting the total number of questionnaire items, and providing incentives and checks to encourage thoughtful responding, may be helpful (see Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Additional innovative approaches to assessment, akin to the goal grid procedure introduced herein, would also be welcomed in future empirical work.

Before closing, we would like to acknowledge some limitations of the present research. Most of our studies (Study 2 excepted) were conducted with undergraduates at a highly ranked university in which the modal student is quite capable and invested in competence. In addition, most participants in our studies were Caucasian. Subsequent research is needed to test the generalizability of our results to younger, older, and less capable individuals, as well as those from a more diverse array of ethnicities. Furthermore, our studies focused exclusively on performance-approach and performance-avoidance goals. Although this is a sensible starting place for this type of investigation (for reasons articulated in the introduction), subsequent work would do well to extend the work to mastery-approach and mastery-avoidance goals.

The present research contributes to the achievement goal literature in a variety of different ways. On the theoretical front, it offers a new perspective on the role of perceived competence in performance-based goal regulation. On the applied front, it provides additional data highlighting the potential danger of establishing a performance-approach goal emphasis in the classroom. On the methodological front, it points to the need to take method factors into account when interpreting achievement goal data and devising scales to assess achievement goal constructs. The issues addressed in our research lie at the center of the achievement goal approach to achievement motivation, and accordingly, it is surprising how little research has been conducted in this area. We encourage other investigators to join this empirical endeavor, as we believe it promises to bear considerable fruit that will help the achievement goal approach continue to develop and mature as it enters its fourth decade.

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