Examining the Influence of Other-Efficacy and Self-Efficacy on Personal Performance

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This research examined the relative effects of other-efficacy and self-efficacy beliefs in relation to individual performance within a cooperative dyadic setting. Pairs of female participants ($M_{age} = 20.08$, $SD = 1.93$) performed three practice trials on a dyadic dance-based videogame. Other-efficacy and self-efficacy beliefs were then manipulated through the provision of bogus feedback regarding each pair member’s coordination abilities. Following the administration of this feedback, pairs performed a final trial on this dance-based task. The results revealed a main effect for other-efficacy, such that participants in the enhanced other-efficacy conditions outperformed those in the inhibited other-efficacy conditions on this task. A main effect for self-efficacy was not observed. Furthermore, there was no evidence of an interaction between other-efficacy and self-efficacy. The results of this study suggest that other-efficacy may supersede the effects of self-efficacy in supporting personal performance within cooperative relational contexts.

Keywords: other-efficacy, self-efficacy, personal performance, cooperative dyads, experimental design

Over the past three decades, a considerable amount of research attention has focused on the predictive effects of self-efficacy beliefs in relation to personal performance. This is perhaps unsurprising given that self-efficacy—which refers to a belief in one’s abilities to perform a given behavior (Bandura, 1997)—has consistently been found to predict human accomplishment across diverse settings, including sports (Moritz, Feltz, Fahrbach, & Mack, 2000), education (Multon, Brown, & Lent, 1991; Pajares, 1996), and the workplace (Stajkovic & Luthans, 1998). In addition to predicting performance, a substantive causal relationship has been established between self-efficacy and personal performance (e.g., Bandura, 1982). Indeed, the documented strength of this relationship is so robust that it has led Bandura (1997) to proclaim self-efficacy necessary for personal success.

While acknowledging that beliefs of personal agency will invariably shape our cognitions, emotions, and behaviors, it has been suggested that other-efficacy beliefs may also hold important implications within cooperative relational contexts.
Influence of Other-Efficacy (Lent & Lopez, 2002). Other-efficacy refers to a belief in one’s partner’s (e.g., coach, teammate) capabilities to perform a given behavior (Lent and Lopez, 2002) and differs conceptually from self-efficacy insofar as the referent shifts from oneself to another. From the perspective of social cognitive theory, Bandura (1997) purported that the most effective means of exercising control is directly through personal agency, and in particular through self-efficacy beliefs. However, when people work cooperatively on an interdependent task, other-efficacy beliefs may partially compensate for or augment the effects of self-efficacy in relation to personal performance (Lent & Lopez, 2002).

In an early examination of the predictive effects of other-efficacy, Lopez and Lent (1991) considered the association between other-efficacy beliefs and indices of relationship quality among young-adult romantic couples. These researchers found that beliefs in one’s partner’s relationship management skills positively predicted satisfaction within, and intentions to persistent with the relationship. In a similar manner, Jackson and colleagues (Jackson, Beauchamp, & Knapp, 2007; Jackson & Beauchamp, 2010) reported that perceptions of other-efficacy were related to improved indices of relationship commitment and satisfaction among athlete–athlete and coach–athlete partnerships. Other-efficacy has also been linked to performance outcomes within relational contexts. Beauchamp and Whinton (2005) examined equestrian riders’ beliefs in their own and their horse’s capabilities and found that both beliefs were able to explain unique variance in objective measures of riding performance. Although these studies collectively point to the potential benefits of displaying confidence in a significant other’s capabilities, researchers have yet to examine the relative causal influence of other-efficacy and self-efficacy beliefs in relation to personal performance. As a result, an understanding of the causal influence that other-efficacy exhibits on personal performance within relational contexts remains unclear.

In this study, we sought to compare the relative influence of other-efficacy and self-efficacy in relation to personal performance using an experimental design. Consistent with the theorizing outlined above (Bandura, 1997; Lent & Lopez, 2002) as well as empirical findings linking both self-efficacy and other-efficacy to improved human achievement (Beauchamp & Whinton, 2005; Stajkovic & Luthans, 1998), we predicted a main effect for self-efficacy and other-efficacy such that both beliefs would positively influence personal performance. However, given the primacy allotted to personal (or direct) forms of agency in influencing personal accomplishment (cf. Bandura, 1997), we further refined this hypothesis by predicting that self-efficacy would have a greater influence on personal performance than other-efficacy.

Method

Participants and Procedures

Our a priori power analysis, using the software program G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007) revealed that a total sample size of 156 participants was required to detect a medium effect size \(d = .40\); Cohen, 1988) with \(\alpha = .05\) and power = .80. To be conservative, one hundred sixty female university students \((M = 20.08\) years, \(SD = 1.93\)) were targeted for study inclusion. These students
were recruited by way of flyers distributed throughout a large university campus in Western Canada and participated in exchange for five dollars and the chance to win a digital audio player (DAP). The study was delimited to females to allow for comparisons across a demographically homogenous sample. This was done in an attempt to minimize extraneous sources of performance variability within pairs.

To minimize the likelihood that dyad members knew each other before the trial, participants were matched across the diverse locations throughout campus from which they had responded to the initial poster advertisements. Upon arrival at the laboratory, potential dyads members provided confirmation that they did not know each other. They were then told that they would be working cooperatively with the other participant (i.e., their partner) on a dance-based videogame, entitled “In the Groove” (Roxor Games, 2004), and that a DAP would be awarded to each member of the pair that had the best collective performance on this videogame. Participants provided consent and were subsequently assigned to a dance pad (dance pads were placed side-by-side facing a large computer monitor) and run through a tutorial. During this tutorial it was explained that the purpose of the game was to step on the particular panel(s) of the dance pad that corresponded to the directional arrows displayed on a computer monitor. These arrows were presented rhythmically such that participants were prompted to step in time with the music.

Following this tutorial, participants completed three “practice” trials (i.e., songs) together with their partner. Upon completion of these practice trials, participants were randomly allocated to one of four experimental conditions, taken into separate rooms, and provided with predetermined (bogus) feedback regarding their own performance, their partner’s performance, and the pair’s collective performance. Participants were allocated into conditions with equal frequency. As a result, each condition had a sample size of 40. Dependent on their randomly assigned condition, participants were told that relative to the other participants in the study: (a) the personal performance of both members of the pair was in the 87th percentile and, collectively, their pair’s performance was in the 93rd percentile; (b) their partner’s performance was in the 87th percentile, their own performance was in the 43rd percentile, and, as a pair, their performance was in the 62nd percentile; (c) their partner’s performance was in the 43rd percentile, their own performance was in the 87th percentile, and, as a pair, their performance was in the 62nd percentile; or (d) the personal performance of both members of the pair was in the 43rd percentile and, collectively, their pair’s performance was in the 37th percentile. Thus, self-efficacy and other-efficacy were manipulated orthogonally with experimental conditions designed to enhance other-efficacy and self-efficacy (condition a), enhance other-efficacy and inhibit self-efficacy (condition b), inhibit other-efficacy and enhance self-efficacy (condition c), and inhibit other-efficacy and self-efficacy (condition d).

Five minutes after this feedback had been administered, participants were invited to provide ratings of self-efficacy and other efficacy. Following the administration of these measures, participants were reunited with their partner to complete the experiment’s final trial. At this point participants were reminded that each member of the pair that had the best group performance on the forthcoming trial would receive a DAP. Upon completion of this trial, participants were debriefed regarding the study’s deception procedures, and informed that a raffle (and not collective performance) would determine the allocation of DAPs.
Influence of Other-Efficacy

Measures

Participants’ self-efficacy beliefs were assessed using a three-item measure, anchored by 0 (cannot do at all) to 100 (certain can do) scale, in which participants were asked to rate their confidence in their abilities to (1) “step in time with the music,” (2) “maintain balance during the trials,” and (3) “step on the dance pads at the appropriate time” (cf. Bandura, 1997, 2006). The same three-item measure was used to assess participants’ other-efficacy beliefs, but in this case the referent was changed from oneself to one’s partner (Lent & Lopez, 2002; Jackson et al., 2007). Specifically, each item was prefixed by “rate how confident you are that your partner can perform the tasks described below,” and ratings were again provided on a 0–100 scale. Given that self-efficacy and other efficacy are theorized to be conceptually distinct efficacy constructs, we conducted a confirmatory factor analysis using EQS (Bentler, 2004) in which we specified an a priori two-factor model. The results provided evidence of acceptable model fit, χ²(7) = 25.49, p < .001, CFI = .97, SRMR = .04, with items loading (≥ .49) onto their hypothesized factors (Bentler & Yuan, 1999; Hu & Bentler, 1999). Composite factor scores were subsequently calculated based on the self-efficacy and other-efficacy items associated with each scale (α = .88 and .82 respectively).

Performance scores for each trial were based on the percentage of correct dance steps made during each song. In the interest of attaining a reliable assessment of each participant’s performance before our experimental manipulation, a composite premanipulation score was calculated using the performance data from the three practice trials (α = .93). This premanipulation score was the subtracted from participants’ performance on the fourth trial to calculate a performance score for each participant. All subsequent analyses were conducted using SPSS Version 16.0 (SPSS Inc., 2007).

Results

Preliminary Analysis

In light of the fact that data were obtained from individuals within pairs, an intraclass correlation (ICC) was calculated using partners’ performance scores to ascertain the extent to which measures associated with the dependent variable demonstrated nonindependence. The resulting ICC was nonsignificant, ICC = .092, F(79,79) = 1.20, p = .21, meaning that the performance data did not violate assumptions of independence. As a result, individual-level analyses were subsequently performed (cf. Kenny, Kashy, & Cook, 2006).

Manipulation Check

To assess whether the manipulation of self-efficacy and other-efficacy was successful, a 2 (enhanced vs. inhibited self-efficacy conditions) × 2 (enhanced vs. inhibited other-efficacy conditions) MANOVA was run with reported self-efficacy and other-efficacy specified as dependent variables. The results revealed that the manipulation was effective, whereby participants in the enhanced other-efficacy conditions reported higher levels of other-efficacy, M = 0.11, SD = 0.46, than those
in the inhibited other-efficacy conditions, $M = -0.11, SD = 0.54, F(1,156) = 8.18, p = .01, d = .46$, and participants in the enhanced self-efficacy conditions reported higher levels of self-efficacy, $M = 0.13, SD = 0.63$, than those in the inhibited self-efficacy conditions, $M = -0.13, SD = 0.68, F(1,156) = 6.01, p = .02, d = .39$. 

In addition to these main effects, participants in the enhanced other-efficacy conditions, $M = 0.04, SD = 0.64$, and inhibited other-efficacy conditions, $M = -0.04, SD = 0.70$, did not differ on reported levels of self-efficacy, $F(1,156) = 0.49, p = .49, d = .11$, whereas participants in the enhanced self-efficacy conditions, $M = 0.08, SD = 0.47$, reported a “trend” toward levels of other-efficacy higher, $F(1,156) = 4.08, p = .05, d = .33$, than those of participants in the inhibited self-efficacy conditions, $M = -0.08, SD = 0.55$. No significant interactions were observed for the reported levels of self-efficacy, $F(1,156) = 0.50, p = .48, d = .11$, or other-efficacy, $F(1,156) = .01, p = .98, d = 0$.

**Main Analyses**

To determine the effect of self-efficacy and other-efficacy in relation to participant performance, a 2 (enhanced vs. inhibited self-efficacy conditions) × 2 (enhanced vs. inhibited other-efficacy conditions) ANOVA was conducted with performance specified as the dependent variable. This analysis revealed a main effect for other-efficacy, $F(1,156) = 4.47, p = .04, d = .35$, such that participants in the enhanced other-efficacy conditions outperformed, $M = 14.75, SD = 13.01$, those in the inhibited other-efficacy conditions, $M = 10.22, SD = 13.95$. In contrast, a main effect for self-efficacy was not observed, $F(1,156) = 0.18, p = .68, d = .06$, meaning that performance did not differ between participants in the enhanced, $M = 12.33, SD = 13.81$, and inhibited, $M = 12.93, SD = 13.53$, self-efficacy conditions. Furthermore, an interaction between enhanced and inhibited self-efficacy and other-efficacy conditions in relation to performance was not found, $F(1,156) = 0.19, p = .67, d = .06$ (see Figure 1).

**Discussion**

Conceptions of personal efficacy have consistently been theorized to be invaluable in supporting human functioning. Indeed, Bandura (1997) has referred to personal efficacy as constituting “the key factor of human agency” (p. 3, emphasis added). More recently, it has been purported that high levels of other-efficacy may complement the effects of self-efficacy in supporting personal performance within cooperative relational contexts (Lent & Lopez, 2002). The results of this study are consistent with the position that other-efficacy may bolster individual achievement. However, the current results suggest that other-efficacy may be more important than previously theorized. When participants in this study displayed elevated confidence in their partner’s capabilities (i.e., a high degree of other-efficacy), their own performance was greater than when they displayed a low level of confidence in their compatriot (i.e., a low degree of other-efficacy), irrespective of whether their self-efficacy beliefs were low or high. Thus, other-efficacy as opposed to self-efficacy may be a more substantive determinant of an individual’s task-relevant behavior within cooperative relational contexts.
The current results serve to challenge a central tenet of social cognitive theory, namely, that no efficacy belief “is more focal or pervading than the belief of personal efficacy” (Bandura, 2000, p. 75). Although our results might be considered at odds with this tenet of social cognitive theory, they may be potentially explained by Karau and Williams’s (1993) collective effort model. This model proposes that the degree of engagement in an interdependent activity will be determined based on the perceived correspondence between personal effort and attainment of the preferred outcome. When attainment of the preferred outcome is thought to be influenced by the actions of the perceiver, task engagement is predicted. In contrast, task disengagement is predicted when an individual perceives that his or her actions will not influence the likelihood of attaining the desired outcome. Within the context of the current study, it is possible that participants in the enhanced other-efficacy conditions perceived that the desired outcome (exhibiting the best collective performance and winning the “prize”) was attainable given that they were paired with a competent partner. In contrast, those in the inhibited other-efficacy conditions may have perceived that exhibiting the best collective performance was impossible given the low capabilities of their partner. A consideration of the current findings in concert with the collective effort model (Karau & Williams, 1993) suggests that participants in the inhibited other-efficacy conditions may have become disengaged from the task during the final trial relative to participants in the enhanced other-efficacy conditions. Unfortunately, due to the exploratory nature of

**Figure 1** — Performance scores for participants in each of the four conditions. Error bars denote standard error of the mean.
this study, we did not assess perceptions of task engagement or motivation following this fourth trial. In future, researchers are encouraged to examine the influence of other-efficacy and self-efficacy within relational contexts while also accounting for task engagement and motivation.

In the current study, we sought to examine the influence of other-efficacy and self-efficacy in relation to personal performance within a demographically homogeneous group. To do this, we chose to examine these constructs among female pairs. Other-efficacy beliefs have been implicated in the functioning of mixed gender dyads (Lopez & Lent, 1991), and in future it would be worthwhile to examine whether the results obtained in this study replicate with such mixed gender dyads, as well as within male-only dyads. The influence of self-efficacy and other-efficacy involving tasks that require greater interdependence (i.e., pairs directly interacting with one another during the given task) should also be explored. In addition, given the physical nature of the task employed in the current study, researchers are also encouraged to explore the influence that other-efficacy and self-efficacy have on personal performance among pairs completing nonphysical (i.e., cognitive) tasks.

As final note, it is also worth reflecting on the fact that the composition of pairs in the current study can be considered indistinguishable insofar as both members performed the same task (cf. Kenny et al., 2006). In contrast, many partnerships entail the pursuit of a collective goal by members engaged in markedly different behaviors. Consider for example the dynamics that exist in coach–athlete or teacher–student relationships, whereby dyad members are distinguishable based on their roles as well as the tasks they perform. Previous research has examined the predictive effects of other-efficacy and self-efficacy within indistinguishable (e.g., Jackson et al., 2007) and distinguishable (e.g., Lopez, & Lent, 1991; Jackson & Beauchamp, 2010) pairs. However, researchers have yet to examine the causal influence of other-efficacy in relation to personal performance within this latter type of dyad. When combined with the current research, further insight regarding the predictive utility of other-efficacy will be gained from studies conducted with different demographic samples, participating in physical and cognitive tasks involving highly interdependent activities, and as a part of indistinguishable and distinguishable pairs. Given the ubiquity and importance of partnerships, this is certainly a meaningful pursuit.

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References


Roxor Games (Firm). (2004). In the Groove. Austin, TX: Roxor Games Inc.


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