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Jean-Baptiste Litrico¹ and Jin Nam Choi²

Abstract

The present study integrates symbolic interactionism with Bandura's social cognitive theory by conceptualizing and examining socially reflected efficacy beliefs within groups. The data collected from 128 students in 39 project teams indicate that self-constructed and reflected images of self-efficacy are empirically distinct from each other; however, such is not the case for self-constructed and reflected images of team-efficacy. Consistent with our theoretical expectations, our multilevel polynomial regression analysis revealed that members engaged more in work collaboration and less in process hindrance when they perceived congruence between self-efficacy and reflected self-efficacy, between self-efficacy and team efficacy, and between reflected self-efficacy and team efficacy. Our results suggest that self-efficacy beliefs have a socially constructed nature, thus expanding social cognitive theory.

Keywords

self-efficacy, team-efficacy, symbolic interactionism, self-verification theory, reflected appraisals

Confidence in one's own capacity to perform a given task is widely acknowledged to substantially influence an individual's actual performance of the task (Beck & Schmidt, 2012; Chen & Bliese, 2002; Gist, 1987). Bandura

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(1997) introduced the term *self-efficacy* to denote an individual's confidence in his/her capacity to perform a specific task through effective utilization of the required cognitive, social, or technical skills. The construct *collective efficacy* or *team efficacy* was later introduced to refer to the confidence level of a group of individuals in their capacity to perform a specific task; the impact of this team-level efficacy belief on actual team performance has also been demonstrated (Dithurbide, Sullivan, & Chow, 2009; Gully, Incalcaterra, Joshi, & Beaubien, 2002).

To date, the efficacy literature has mostly focused on self-perceptions of self- and team efficacy and has investigated their main effects on task behavior and performance (Stajkovic, Lee, & Nyberg, 2009). However, this prevailing focus has overlooked the possibility that efficacy beliefs have a social dimension, and that a deeper understanding of their implications may be gained by considering how other members evaluate the focal member's and the team's efficacy. Symbolic interactionists first proposed that people's self-perceptions may be related to beliefs about how they are viewed by others (Kenny & Depaulo, 1993; Shrauger & Schoeneman, 1979). Cooley (1902) used the looking glass as a metaphor to illustrate his theory that in a social setting, each person becomes a mirror that reflects an image of oneself, and that people's self-concept is largely influenced by such reflected images.

Drawing on symbolic interactionism (Shrauger & Schoeneman, 1979) and self-verification theory (Swann, Milton, & Polzer, 2000), we posit that individuals in a social setting hold both their own self-images and their perceptions of reflected images, and we propose the existence of *reflected efficacy beliefs* as perceived by team members. While self-efficacy (SE) represents a person's own judgment of his/her capacity to perform, *reflected self-efficacy* (rSE) refers to a person's perception of how other team members evaluate his/her capacity to perform a given task. The concept of reflected efficacy beliefs expands social cognitive theory by suggesting the possibility of congruence or incongruence among various types of efficacy beliefs, which can engender psychological tension and impact interpersonal motivation (Du, Choi, & Hashem, 2012). Specifically, we expect that congruence among these various efficacy beliefs, as perceived by individual members in work teams, has important implications for their involvement in team task processes. The present study theorizes and empirically examines the individual-level dynamics among various efficacy perceptions held by an individual member and his/her engagement in team task processes.

Most previous studies have focused on the direct performance implications of self- and team efficacy. By contrast, we explore the social implications of interplay among multiple efficacy perceptions held by an individual member. To assess a person's involvement in team tasks, we focus on two

interpersonal outcomes (Choi, 2009; Lee & Allen, 2002): (a) work collaboration (i.e., a member's constructive engagement with others to promote collective goals) and (b) process hindrance (i.e., a member's counterproductive engagement with others to deter the team's progress toward collective goals). These two interpersonal behaviors represent both positive and negative forms of interaction that a member can initiate during team task processes. Below, we develop hypotheses regarding the congruence among various efficacy beliefs and test them using multi-wave longitudinal data.

Multiple Facets of Efficacy Beliefs

A key attribute of a group setting is that each member is both a source and a receiver of stimuli (Hackman, 1990). As each member constructs a personal representation of his/her self- and social images, each becomes, in a sense, a mirror for all the others in the social surrounding (Cooley, 1902; Goffman, 1959). Thus, individual behavior in a group setting is shaped by both one's own perceptions and those of other members (either perceived or actual) as well as by the potential interactions between the two. Polzer, Milton, and Swann (2002) showed that congruence between how team members see themselves and how other members see them enhances the positive effect of diversity on team creative performance. Thatcher and Greer (2008) demonstrated that at the individual level, identity comprehension or "the degree to which the relative importance of one's identities is recognized by important others" (p. 5) significantly predicts a member's creativity and satisfaction in work teams. As these studies indicate, people's perceptions of how others actually see them are not always accurate (Kenny & Depaulo, 1993; Shrauger & Schoeneman, 1979). For this reason, we focus on perceived differences between a person's self-perception and how she thinks others view her. Perceived differences might arise because the image of self deduced from interaction with others may not coincide with that which is personally held (Jussim, 1991; Swann et al., 2000). Therefore, individuals can develop different and potentially contradicting self-perceptions emerging from social interaction, thereby resulting in the multiplicity of self-images.

Building on the aforementioned studies on self-image, we introduce the concept of *reflected efficacy* to expand the conceptualization of efficacy beliefs and properly describe their multifaceted nature. We define reflected self-efficacy as a person's perception of how other team members evaluate his/her capacity to perform a given task. Thus, we consider these types of efficacy beliefs as perceived by the focal person.

A similar reasoning can be applied to team-efficacy (TE) perceived by members. TE is typically defined as a shared belief on team competence and

is thus regarded as a group-level construct (Gibson, Randel, & Earley, 2000; Gully et al., 2002). However, individual members' evaluation of team capacity may not necessarily be congruent, especially when the task at hand does not require close interaction (Katz-Navon & Erez, 2005). In the present study, we analyze perceived TE at the individual level to designate the individually held perception and confidence in the team's ability to perform a specific task. When conceived as an individual-level construct, TE perceptions can be construed as both direct judgment ("I believe in my team's capacity to perform") and reflected judgment ("I think my team believes in its capacity to perform"). Therefore, we suggest that the process of comparison applies not only to images of self but also to those of the team.

By combining the levels of reflection with the target or referent of efficacy perceptions, a two-by-two matrix that represents four types of efficacy beliefs can be generated, as depicted in Figure 1. Each type of efficacy perception represents a unique question that individuals may ask about themselves in a group setting. As the target of efficacy perceptions produces two separate and relatively independent beliefs (i.e., SE and TE), we expect that the level of reflection similarly generates meaningful distinctions among efficacy perceptions held by individuals, thus creating four types of efficacy perceptions, namely SE, rSE, TE, and reflected team efficacy (rTE).

Comparison Among Various Forms of Efficacy Beliefs

The four types of efficacy perceptions summarized in Figure 1 do not necessarily converge, resulting in important motivational consequences driven by the gap between them (Du et al., 2012). Based on the conceptual distinctiveness of the four efficacy perceptions, we propose that individuals engage in continuous psychological comparison of the four efficacy perceptions as part of their identity negotiation in a social setting (Swann et al., 2000), the result of which will shape their interpersonal and task motivation. The comparative relationships among the four efficacy perceptions address distinct questions that connect a person to different aspects of his/her social environment.

Effects of congruence between individually held efficacy perceptions and reflected efficacy perceptions. In the SE–rSE relationship, members evaluate whether their competence is adequately acknowledged by their peers, addressing questions such as "Does my team under- or over-estimate my task ability?" Self-constructed and socially reflected efficacy judgments may not always coincide. For example, an individual may have high confidence in his abilities, but other team members may not share the same view and doubt his abilities (Anderson, Srivastava, Beer, Spataro, & Chatman, 2006). Conversely, a person may lack

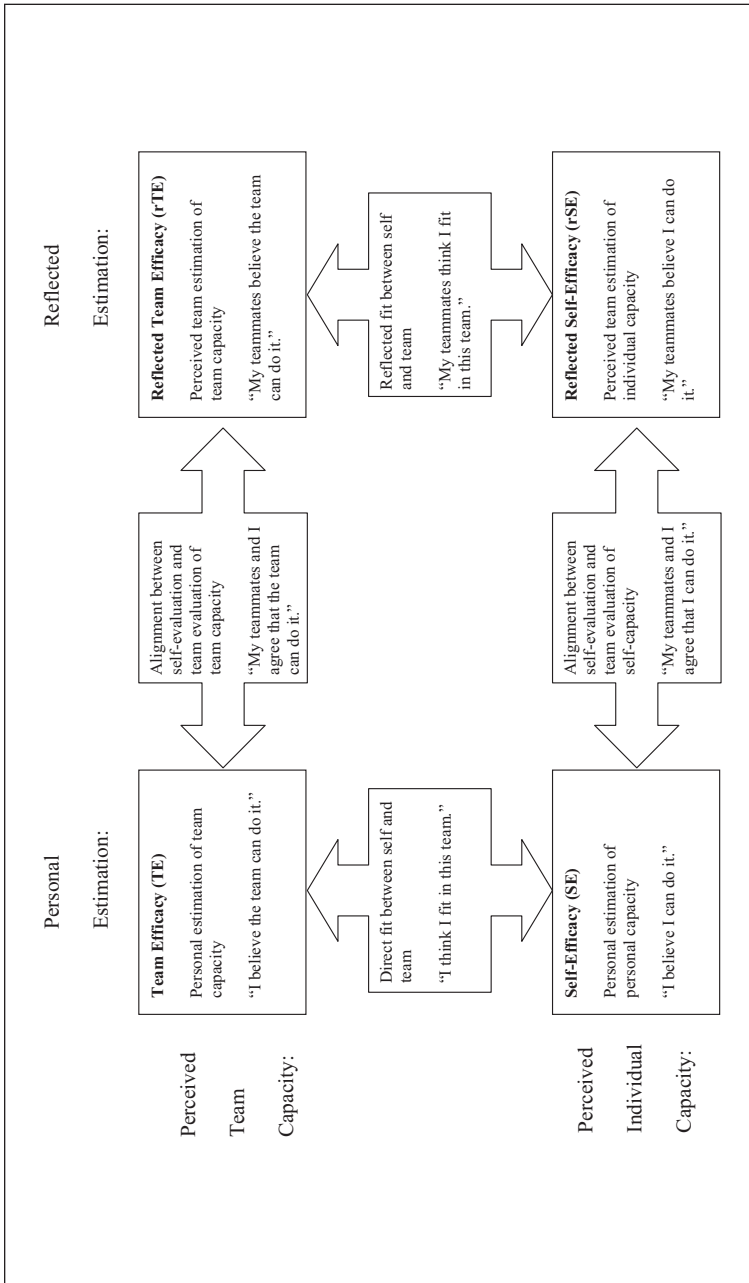


Figure 1. Conceptual model of multiple efficacy beliefs held by an individual member.

self-confidence and underestimate his competence, whereas other members highly regard his competence (Polzer et al., 2002). We expect that individual members are more likely to collaborate with others and less likely to hinder team task processes when they believe that other members adequately acknowledge their self-perceived task competence (SE–rSE congruence).

Indeed, self-verification theory suggests that people prefer self-verifying environments and react positively when their self-image is confirmed by others, even when the self-image to be confirmed is negative (Swann et al., 2000). In other words, when individuals face a social image that is substantially different (either positive or negative) from their self-image, they develop a negative perception of the situation and consequently withdraw (Thatcher & Greer, 2008). For example, individuals can become frustrated when their teammates do not acknowledge their task abilities (high SE–low rSE incongruence); in turn, this frustration may reduce their social and task engagement and even motivate them to disrupt the team process. As Polzer et al. (2002) maintained, an individual who repeatedly receives hints that her suggestions or ideas are not valued within the team will be less motivated to participate and will likely withdraw from further team involvement. The reverse situation (low SE–high rSE incongruence), in which a person believes that others overestimate his competence, may result in a similar detrimental situation because this perception can be interpreted as threatening or unrealistic performance pressure that could create psychological discomfort and tension (Swann, Polzer, Seyle, & Ko, 2004). Such a situation can make the person anxious and overwhelmed, which could result in social withdrawal. Thus, “appraisals that exceed a person’s self-views can be as troublesome as appraisals that fall short of self-views. Both sources of incongruence can undermine effective interaction” (Polzer et al., 2002, p. 300).

With regard to the TE–rTE relationship, we also expect detrimental effects on individual involvement in team task processes when these two efficacy perceptions are not aligned (TE–rTE incongruence). Although no prior studies have directly examined such an expectation, the climate strength literature suggests the benefit of congruent contextual perceptions shared among members. For instance, climate strength or the extent to which members share the same climate perceptions reinforces the relationships between various team climates (e.g., support, innovation, goal achievement) and team performance (González-Romá, Fortes-Ferreira, & Peiró, 2009). Sanders, Dorenbosch, and de Reuver (2008) also reported that climate strength intensifies the individual-level relationship between perceptions of high-commitment HRM systems and affective commitment. Drawing on these findings, we propose that members are likely to actively participate in team tasks when they believe that their own judgment of TE is consistent with that of their peer members.

Effects of congruence between efficacy perceptions about self and about the team. In the SE–TE relationship, individuals evaluate whether their task competence is compatible with their team’s competence, thereby answering the questions “Do I fit into this team as a capable member?” and “Does this team have enough potential to merit my contribution?” We expect that the perceived misalignment between SE and TE will lead to potential problems because of status comparison and fit within the team.

Social comparison theory suggests that both downward and upward comparisons have complicated psychological and interpersonal ramifications that often result in negative outcomes (Buunk & Gibbons, 2007). For example, individuals who have an inflated perception of their status within a team and thus engage in downward comparison tend to be less socially accepted and may be rejected outright by others because they are perceived as disruptive to team processes (Anderson, Ames, & Gosling, 2008). Without facing the additional challenges of downward and upward comparisons, individuals with congruent efficacy perceptions are likely to be stable and confident based on confirmed self-images and are thus able to interact harmoniously with others (Polzer et al., 2002).

Similarly, motivation theories, such as expectancy theory (Vroom, 1964), suggest that the congruence between SE and TE beliefs may enhance a member’s willingness to collaborate and contribute to team performance (Du et al., 2012). For example, when members estimate that the team is less competent than themselves (high SE–low TE incongruence), they may be less motivated because they believe that their team is not competent enough to fully utilize their contributions, and that their efforts will ultimately be wasted. In the opposite situation (low SE–high TE incongruence), individuals may feel inadequate or less qualified to make meaningful contributions, making them less motivated to participate in team task processes. Moreover, individuals who have received negative feedback within a team setting may tend to minimize their involvement and interactions with the team as a means of reducing their exposure to such disconfirming feedback (Shrauger & Schoeneman, 1979). Thus, we expect that individuals are strongly motivated to work with others (instead of withdrawing from the situation or actively hindering team task processes) when they believe that the team is as competent as they are (SE–TE congruence).

With regard to the rSE–rTE relationship, incongruence between the two reflected efficacy perceptions may have negative implications for a person’s engagement in team task processes because of the same reasons articulated above including social comparison or the fitting process between a member and the team. However, such negative implications are likely to be weaker in rSE–rTE incongruence than in the other three types of incongruence (i.e.,

SE–rSE, TE–rTE, and SE–TE) because both rSE and rTE involve other members' judgments as perceived by a focal member. This lack of direct SE or TE involvement in the fitting process may reduce the significance of such a process for a person's task engagement in a team setting.

Effects of efficacy levels leading to congruence conditions. According to prior research on person–environment fit, congruence or fit situations have differing consequences for individuals depending on the level at which the fit situation takes place (Choi, 2004; Kristof-Brown, Zimmerman, & Johnson, 2005). Likewise, congruence between two efficacy perceptions may have different implications for interpersonal behavior and task engagement depending on the levels of efficacy that induced the congruence (Bandura, 2012). For example, people may be more willing to collaborate and contribute to team tasks when they believe that their high abilities are properly acknowledged by their peers (high SE–high rSE congruence) than when their average abilities are properly recognized (medium SE–medium rSE congruence) and even more than when their low abilities are recognized (low SE–low rSE congruence). Therefore, we propose that high–high congruence between two efficacy perceptions induces greater interpersonal benefit than medium–medium or low–low congruence does. Although the absolute level of efficacy has significant implications for human behavior (Bandura, 1997), we still hypothesize that even low–low congruence is preferable over incongruence because of the potentially negative social ramifications associated with the latter, such as withdrawal from or hindrance to team processes. In sum, we hypothesize the following relationships based on these theoretical developments:

Hypothesis 1: Congruence between two efficacy beliefs (SE–TE, SE–rSE, TE–rTE, or rSE–rTE) is positively related to individual members' work collaboration and negatively related to process hindrance.

Hypothesis 2: The positive effects of congruence are greater when both efficacy beliefs are high (high–high congruence) than when both are low (low–low congruence).

Method

Sample and Data Collection Procedure

The target sample of this study included 174 undergraduate management students at a North American business school. At the beginning of the semester, these students were randomly assigned to 39 case teams composed of 4 to 5

members each. The teams worked together to analyze a business case throughout the semester. Each team produced its case analysis report, which accounted for 20% of their final mark. The students voluntarily participated in the present study to earn gift certificates. Data were collected in two phases: (a) on the 8th week of the semester (T1, $n = 128$, response rate = 73.6%) to measure the four types of efficacy perceptions (see Figure 1), and (b) on the 12th week of the semester (T2, $n = 135$, response rate = 77.6%) to obtain peer ratings of the focal member's work collaboration and process hindrance. The final sample for analysis included 128 members from 39 teams. The average age of the sample was 19.6 years ($SD = 1.39$), and 62% of the participants were females. In terms of race, the sample included 57% Whites, 30% Asians, and 13% from other categories (e.g., Hispanics and African Americans).

Measures

The data were collected over two different phases of the semester using scales with acceptable internal consistency or inter-rater reliability.

Efficacy perceptions (T1). The items used to assess efficacy perceptions were adapted from Gibson et al. (2000). To develop commensurate measures of the four efficacy perceptions (Kristof-Brown et al., 2005), we used the same set of items, worded identically but with different evaluation referents for each perception (see Table 1 for the four sets of items). All four scales exhibited high internal consistency (SE, $\alpha = .87$; rSE, $\alpha = .92$; TE, $\alpha = .89$; rTE, $\alpha = .91$). The response format was a 7-point Likert-type scale (1 = *strongly disagree*, 7 = *strongly agree*).

Work collaboration and process hindrance (T2). Our study focused on the focal members' interpersonal outcomes rather than on team outcomes. Therefore, we chose measures of interpersonal behavior exhibited by each member during team task performance, specifically examining one positive (work collaboration) and one negative (process hindrance) behavioral outcome variables (Choi, 2009; Lee & Allen, 2002). Toward the end of the semester, the participants rated these two interpersonal behaviors as exhibited by other members of the team. To assess work collaboration, we instructed the participants to rate the statement, "I frequently work on team tasks with this member." This statement appeared in a section of the questionnaire titled "Collaboration Among Members" and was preceded by the heading, "Quantity of Collaboration and Participation in Team Processes" to clearly indicate that the interaction in question should be productive and beneficial with

Table 1. Scale Items Developed to Measure the Four Types of Efficacy Beliefs and Their Factor Loadings.

Factor	Item	Factor loading		
		1	2	3
Self-efficacy	I have confidence in myself.	0.05	0.31	0.76
	I expect to be known as a high performer.	0.09	0.41	0.67
	I believe that I can solve any problem I encounter.	0.11	0.30	0.75
	I can get a lot done when I work hard.	0.17	0.24	0.72
	I believe that I can be unusually good at producing high-quality work.	0.17	0.18	0.85
Reflected self-efficacy	My team has confidence in me.	0.21	0.80	0.32
	My team sees me as a high performer.	0.12	0.81	0.41
	My team believes that I can solve any problem I encounter.	0.17	0.74	0.33
	My team thinks that I can get a lot done when I work hard.	0.23	0.83	0.26
	My team believes that I can be unusually good at producing high-quality work.	0.21	0.64	0.48
Team efficacy	I have confidence in my team.	0.82	-0.05	0.10
	I expect my team to be known as a high-performing team.	0.71	0.16	0.24
	I believe that my team can solve any problem it encounters.	0.86	0.15	0.14
	I believe that my team can get a lot done when it works hard.	0.70	0.20	0.22
	I believe that my team can be unusually good at producing high-quality work.	0.77	-0.05	0.20
Reflected team efficacy	My team has confidence in itself.	0.84	0.26	0.04
	My team expects to be known as a high-performing team.	0.74	0.36	0.02
	My team believes that it can solve any problem it encounters.	0.82	0.19	0.01
	My team believes that it can get a lot done when it works hard.	0.84	0.19	-0.06
	My team believes that it can be unusually good at producing high-quality work.	0.80	0.09	0.19

Note. Factor loadings for items included in each of the three factors are indicated by bold fonts.

regard to team performance. To assess process hindrance, the participants rated the statement, "I feel that this member hinders the progress of our team." For these behavioral ratings, we used a scale ranging from 1 (*never*) to 10 (*almost always*). Employing the typical procedure used in network analysis, each focal person's interpersonal behavior was rated by two to four teammates (Perry-Smith, 2006). The peer ratings of work collaboration and process hindrance showed acceptable inter-rater agreement coefficients of .91 and .86, respectively (cf. effective reliability of judges; Rosenthal & Rosnow, 1991, pp. 51-52). Thus, teammates' evaluations were averaged for each focal member.

Results

Empirical Distinctiveness of the Four Efficacy Beliefs

Before testing our congruence hypothesis, we checked if the four types of efficacy beliefs were empirically distinct from each other. We conducted an exploratory factor analysis of the 20 items designed to measure the four efficacy beliefs using principal component analysis with varimax rotation. As reported in Table 1, this procedure resulted in only three factors instead of four because the 10 items for TE and rTE comprised a single factor instead of constituting two separate factors. Similarly, the confirmatory factor analysis indicated that the three-factor model, in which TE and rTE were collapsed into a single factor, $\chi^2(163) = 558.96$; comparative fit index (CFI) = .82; root mean square residual (RMR) = .07, performed significantly better ($p < .001$ for χ^2 comparison) than the hypothesized four-factor model, $\chi^2(161) = 614.35$; CFI = .79; RMR = .18. In addition, the three-factor model offered a significantly better fit to the data than the two-factor model, $\chi^2(165) = 639.71$; CFI = .78; RMR = .10, in which SE and rSE were also collapsed into a single factor.

The results of the exploratory and confirmatory factor analyses clearly showed that SE and rSE were distinguishable. However, TE and rTE were not empirically distinct from each other, constituting a single empirical dimension. Therefore, in the remainder of our analysis, we used a composite measure of TE by averaging the ten items ($\alpha = .94$) designed to measure TE and rTE. This combined TE measure also showed acceptable inter-rater agreement within the same group and between-group variance, $r_{wg} = .71$, ICC(1) = .12, ICC(2) = .60, $p < .01$. Table 2 shows the descriptive statistics and inter-scale correlations among the study variables.

Table 2. Means, Standard Deviations, and Correlations among Variables ($N = 128$).

Variables	M	SD	1	2	3	4	5
1. Self-efficacy	5.79	0.86	—				
2. Reflected self-efficacy	5.24	0.95	.70***	—			
3. Team efficacy	5.53	0.90	.33***	.42***	—		
4. Work collaboration	6.10	2.53	.11	.12	.11	—	
5. Process hindrance	2.36	1.96	.10	.09	-.22*	.03	—

* $p < .05$. *** $p < .001$.

Effects of Congruence between Efficacy Beliefs on Interpersonal Outcomes

In Hypotheses 1 and 2, we proposed that congruence among various efficacy beliefs, particularly high–high congruence, will positively affect individual members' task engagement in a team setting. To test the proposed congruence effects, we used polynomial regression analysis, which is widely accepted and employed as an analytical procedure to examine the effects of fit, congruence, or alignment between two comparable constructs, such as person–environment or person–team fit (Edwards, 1996; Kristof-Brown et al., 2005). TE and rTE were combined into a single factor, indicating that three congruence relationships (i.e., SE–rSE, SE–TE, and rSE–TE) should be tested. Instead of separately performing three partially overlapping sets of polynomial regression analyses to test each of the three congruence relationships, we conducted a single omnibus test of the three congruence effects (Table 3). All predictor variables were scale centered to reduce multicollinearity among predictors (Edwards, 1996).

Considering the nested structure of the present data (individuals within teams), we employed a multilevel approach to polynomial regression analysis (Choi, 2004). Specifically, we used multivariate hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992), which provides less biased test results than ordinary least squares (OLS) regressions by simultaneously estimating individual- and group-level variances. Using OLS regressions with the present data might have resulted in a biased estimation of the coefficients because members from the same team have perceptions that may not be independent from one another. HLM avoids this problem by decomposing the variance into individual and group levels.

Table 3 shows the results of two multilevel polynomial regression equations that predict the two interpersonal outcomes. We performed this analysis hierarchically, starting without any predictor in the model (null model),

Table 3. Results of the Multilevel Polynomial Regression Analysis.

Dependent variable	Work collaboration			Process hindrance		
	Null	Linear	Quadratic	Null	Linear	Quadratic
Model						
SE		-0.12	1.58		0.24	-0.41
Reflected self-efficacy (rSE)		0.55	-1.35		0.11	1.26
Team efficacy (TE)		0.23	-0.05		-0.08	-0.69
SE ²			-1.11			-0.06
rSE ²			-0.89			0.47
TE ²			0.02			0.17
SE × rSE			2.07*			-0.46
SE × TE			0.16			0.72*
rSE × TE			-0.09			-.90**
Individual-level variance (σ^2)	5.970	5.901	5.758	2.704	2.722	2.636
Proportion of explained variance ($\Delta\sigma^2$)		1.2%	2.4%		n/a	3.2%
Group-level variance (τ)	0.399	0.419	0.460	1.790	1.784	1.814

Note. SE = self-efficacy; rSE = reflected self-efficacy; TE = team efficacy; n/a = not applicable. * $p < .05$. ** $p < .01$.

followed by entering the linear effects of the three efficacy perceptions, and then finally entering three interaction terms along with the quadratic terms of the three efficacy perceptions (Edwards, 1996). For work collaboration, the group-level variance was statistically significant ($p < .001$), justifying the use of a multilevel analytic procedure. For work collaboration, the interaction term between SE and rSE was significant ($\beta = 2.07$, $p < .05$) after controlling for the corresponding quadratic effects of the two efficacy variables. For this significant interaction effect, the data points were plotted on a three-dimensional response surface to facilitate substantive interpretation (Edwards, 1996). As shown in Plot A in Figure 2, members exhibited a high level of work collaboration when they reported corresponding levels of SE and rSE, thus supporting Hypothesis 1. Plot A also shows that high-high congruence results in greater work collaboration compared with low-low congruence; this finding is consistent with Hypothesis 2.

For *process hindrance*, the group-level variance was relatively large ($1.79 / [2.70 + 1.79] = .40$ or 40% of the total variance), indicating that the level of members' engagement in process-hindering behavior is strongly influenced by group-level dynamics. For this behavioral outcome, two interaction terms were significant: SE × TE and rSE × TE ($\beta = .72$, $p < .05$ and $\beta = -.90$, $p < .01$, respectively). Plot B in Figure 2 visually maps the pattern of interaction

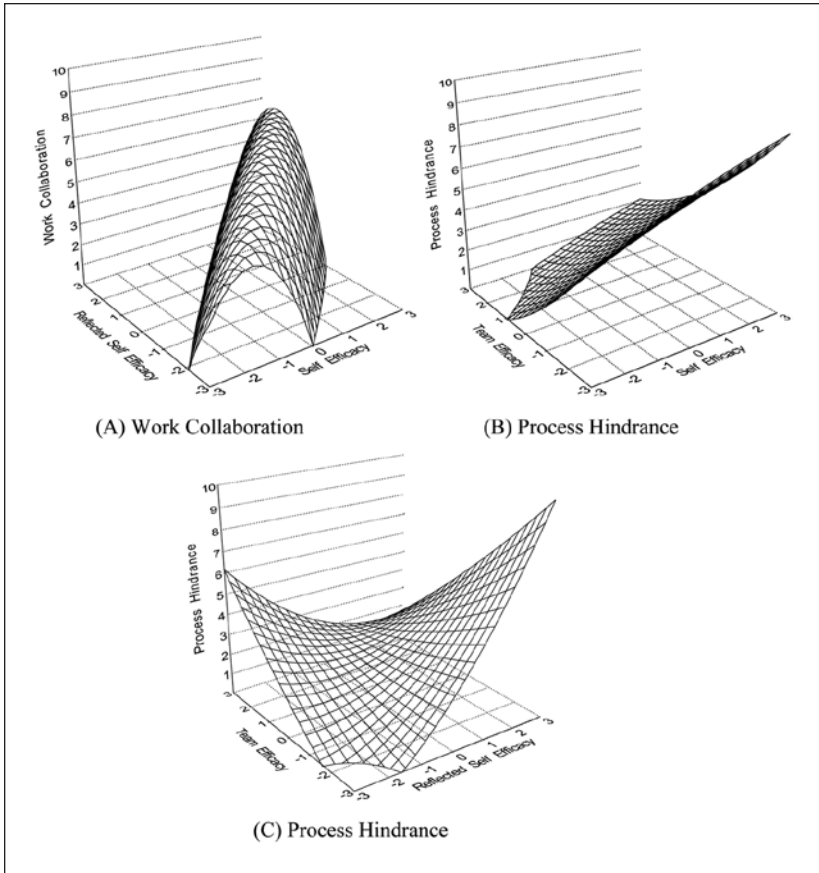


Figure 2. Congruence effects of various efficacy beliefs on interpersonal outcomes.

between SE and TE. Process hindrance was highest under high SE–low TE incongruence, suggesting that this form of incongruence is the most detrimental to interpersonal behavior. Process hindrance was lowest under low SE–high TE incongruence. This finding contradicts Hypothesis 2; the present data suggest that process hindrance was minimized under low SE–high TE incongruence instead of under congruence situations, perhaps because of felt inferiority relative to other members. Plot C in Figure 2 depicts the pattern of the interaction between rSE and TE. This plot clearly shows that congruence between rSE and TE decreased process hindrance, whereas incongruence

between the two increased such negative behavior. Therefore, Hypothesis 1 is supported. However, unlike in the case of work collaboration, the high–high congruence situation in the case of process hindrance was not necessarily better than the low–low condition in reducing process hindrance. Overall, the congruence between SE or rSE and TE at any efficacy level (either high or low) seems beneficial in terms of reducing the active, negative interpersonal behavior of team members.

Discussion

This study applied the social interactionist view and self-verification theory to the exploration of the interplay among various efficacy beliefs perceived by individuals in work teams. Our results confirmed the empirical distinctiveness of SE and rSE; however, no empirical evidence was found for the distinction between TE and rTE. Furthermore, congruence or incongruence between two efficacy beliefs was found to have significant and complex implications for a person's task-related behavior in a team setting. Below, we highlight the theoretical and practical implications of this study along with its limitations that indicate directions for further research.

Theoretical Implications

This study enriches the literature on groups and social cognitive theory by revealing that various efficacy perceptions coexist within individuals in a group. These multiple efficacy perceptions may be divergent, thereby creating unique psychological dynamics. The empirical distinctiveness between rSE and SE is an important finding because it demonstrates multiple individual beliefs about one's capacity to perform, which are not necessarily convergent (Swann et al., 2000; Swann et al., 2004). Although the participants in this study failed to distinguish between their own perception and that of others related to TE (TE vs. rTE), a member's personal evaluation of the team may diverge from that of other members in intensively interacting teams or conversely in large teams with only superficial interactions (Katz-Navon & Erez, 2005).

Individually held and socially reflected images of the self and of the team may or may not converge over time in the course of a person's interaction with other members, thereby leading to varying interpersonal outcomes. Our study suggests several situations in which various efficacy beliefs are incongruent and negatively impact team members' behavior. An example of such scenario is depicted in Plot A in Figure 2. Individuals are

most likely to collaborate with others when they believe that they can make a positive contribution (high SE) as well as when they think their teammates value their capacity (high rSE). Without this belief in peer recognition (i.e., low rSE), high SE becomes counterproductive and decreases the person's collaboration with others. This finding is important because it indicates that the effect of a person's SE may change depending on the presence or absence of social recognition of his/her efficacy. In this scenario, the absolute level of one's SE is therefore less important than its congruence with reflected SE, indicating the significance of the interplay between one's personal self and socially constructed self.

The scenario depicted in Plot B in Figure 2 is another situation that highlights the importance of the congruence but not the main effects of various efficacy perceptions. A high level of SE increases process hindrance when it is combined with low TE. In other words, a member who personally believes that he is significantly more capable than his teammates is perceived by others as disruptive and a hindrance to team processes, perhaps because of his arrogance or mistrust of others. This pattern resonates with the finding of Anderson and colleagues (2008; Anderson et al., 2006) that a member with inflated perceptions of one's own status within a team tends to be rejected by others and is perceived as disruptive. Again, this detrimental effect of SE, when accompanied by low TE, is a caution against the prevailing assumption that SE usually has unilateral positive implications for the task behavior of individuals.

Another interesting scenario is depicted in Plot C in Figure 2, in which high TE engendered highly disruptive behavior when combined with low rSE. Members who thought highly of their team but did not perceive adequate recognition by their teammates had the tendency to impede team processes perhaps because of their frustration with their teammates. These patterns make intuitive sense and provide additional empirical support for self-verification theory (Swann et al., 2000). Nevertheless, these results contradict the widespread assumption that TE beliefs improve team processes and performance, thus suggesting a potential direction for further theoretical elaboration of social cognitive theory (Bandura, 1997).

Interestingly, we found that *positive* team behavior (work collaboration) was linked to congruence between individually held and reflected efficacy perceptions about self, while *negative* team behavior (process hindrance) was linked to incongruence between efficacy perceptions about self and about the team. This suggests that different underlying processes of social comparison operate for positive and negative contributions to team activities: positive team behavior seems linked to accurate peer recognition of individual capacity, but negative team behavior seems sparked by the lack of perceived

compatibility or fit between individual capacity and team capacity. Future studies may further validate this intriguing pattern in organizational settings.

Practical Implications

This study also offers important practical implications. Our analysis reveals the complex interplay among various efficacy beliefs, which may not be surprising to practitioners. Examples of destructive behavior conducted by players with inflated egos abound in sports, wherein team performance is sometimes jeopardized by one overly confident *star*. The interplay of rSE with other efficacy beliefs is particularly significant in practice. People usually infer how others view them through subtle cues and interpretations of rather ambiguous social encounters. Consequently, this image of *how others view me* may be inaccurate, especially in the early stages of team development or in large teams (Thatcher & Greer, 2008). Although our study design did not explore this ambiguity of rSE, we suspect that a substantial gap may exist between perceived reflected self-image and others' real appraisal of the focal person (Polzer et al., 2002). One deliberate strategy to limit this risk could be to implement communication mechanisms in teams that enable members to provide frequent feedback (e.g., 360-degree feedback and team building sessions).

Our theory and empirical findings support the value of congruence among different forms of efficacy beliefs to a person's engagement in team task processes. Over time, SE and rSE may converge if team activities and norms promote opportunities for self-verification and self-disclosure (Swann et al., 2004). For example, an individual's SE is unlikely to remain low after a long period when other members believe that she is a high performer. Although people may simply ignore a few isolated incidents of reflected appraisals that disconfirm their self-perceptions, such disconfirming information becomes increasingly difficult to ignore when such incidents are repeated over time (Kenny & Depaulo, 1993). However, self-perceptions and reflected perceptions may not converge in the early stages of the team or when the level of interaction within the team is too limited, such as in geographically dispersed teams (Ashford, Blatt, & Vandewalle, 2003). With the widespread use of information technology, people are increasingly working in virtual settings where they cannot receive much feedback from their peers. Moreover, increasing cultural and professional diversity within organizations may make it challenging for employees to correctly assess how they are perceived by their peers (Ashford et al., 2003; Polzer et al., 2002). Therefore, team leaders need to develop mechanisms to overcome the barriers that hamper the development of congruence among multiple efficacy perceptions held by members (Thatcher & Greer, 2008).

Study Limitations

The limitations of the study with regard to its sample and methods should be considered when interpreting the findings. First, a relatively small sample was used for the study. Although the sample size was sufficient to detect significant effects, future studies that use a similar analytical approach could yield robust effects by using larger samples. Second, we relied on single-item measures averaged across all team members to assess work collaboration and process hindrance. These interpersonal behavior measures exhibited sufficient inter-rater agreements among peer teammates; this result indicates a certain level of shared perceptions regarding the focal member's behavior in a team setting. Nevertheless, future studies should employ scales with multiple items to enhance confidence in the results. Third, the present data were collected from undergraduate students, raising concerns related to the external validity of the findings. Although we acknowledge the need to validate the present model in other settings, we believe that the present findings have substantial generalizability because the participants in this study interacted for an entire semester with a clear team goal and complex task requirements.

We found in this study that TE and rTE could not be distinguished empirically. This might be due to the fact that our conceptualization of rTE (e.g., "I think my team has confidence in its capacity to perform") also included one's self-perception. Future studies could operationalize rTE differently, by focusing exclusively on other team members' evaluations of team capacity (e.g., "I think other team members have confidence in the team's capacity to perform"). Finally, although SE and rSE were statistically distinct from each other, a high correlation was found between the two constructs ($r = .70, p < .001$). Related to this measurement issue, our research design did not allow us to measure how the focal member's ability was actually evaluated by his teammates. Therefore, we based our argument on individually *perceived* reflected SE which can be somewhat different from the actual images held by others. In addition, we could not assess the effect of possible disagreements among team members about a person's capacity. Does any difference result from whether the team agrees or disagrees about a focal person's capacity? How many disconfirming reflected evaluations are needed for a person to recognize that his capacity is not recognized by other members? Further research should explore the effects and dynamics caused by such disagreements among team members regarding a focal member's capacity. In addition, if other members' actual efficacy beliefs are employed, a member's TE and rTE based on other members are likely to be empirically distinguishable (thus separating TE and rTE constructs); such condition will further enrich the efficacy-related dynamics in groups.

Conclusion and Directions for Future Research

By revealing specific situations in which various efficacy beliefs may conflict and engender constructive or detrimental interpersonal processes, this study suggests an opportunity to expand the focus of research based on social cognitive theory. Instead of emphasizing the main effects of specific efficacy beliefs on performance, our findings call for close attention to *dynamic interactions* among multiple efficacy beliefs. Future research may identify additional situations in which efficacy beliefs conflict and degrade individual behavior and performance in a team setting. The introduction of the distinction between SE and rSE is particularly useful in expanding our understanding of how efficacy beliefs are formed at the individual level. We propose that the construction of efficacy beliefs occurs through a process of reflection and comparison among various self-images. Individually held and socially reflected images are distinct, but arguably interdependent. In several cases, individuals may either work actively to reconcile such images or may limit further social interaction to preserve their individually held images (Swann et al., 2004).

Further research should also explore the longitudinal dynamics of interaction between SE and rSE. Prior findings on self-verification (Polzer et al., 2002) suggest that individuals will tend to harmonize their individually held beliefs about themselves with the reflected appraisals from others. Indeed, “over the long run . . . the glare of others’ mirrors may simply be too overpowering to ignore” (Kenny & Depaulo, 1993, p. 157). Thus, as team members interact over specific tasks, we would expect SE and rSE to converge over time. However, this convergence might be limited if team interaction is superficial or when the team is large (Thatcher & Greer, 2008). We found that a mismatch between SE and rSE was detrimental to individual involvement with and contribution to the team. However, specific moderating conditions may exist; under these conditions, such a mismatch might have a positive, motivating effect on individual involvement in team efforts. For example, in some cases, individuals might actually become *more* motivated to contribute when their potential for contribution is not recognized by other members so that they can prove their potential and change others’ impression. The direction and intensity of such a motivation may depend on the size of the gap between individually held and socially reflected views as well as on other personal and situational factors.¹ Understanding the conditions that promote such a positive effect of incongruent efficacy perceptions is an exciting avenue for future research. The dynamic relationship between individually held and socially reflected images of the self and the team represents promising avenues to expand our understanding of social cognition and interpersonal dynamics in groups.

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References

- Anderson, C., Ames, D. R., & Gosling, S. D. (2008). Punishing hubris: The perils of overestimating one's status in a group. *Personality and Social Psychology Bulletin, 34*, 90-101. doi:10.1177/0146167207307489
- Anderson, C., Srivastava, S., Beer, J. S., Spataro, S. E., & Chatman, J. A. (2006). Knowing your place: Self-perceptions of status in face-to-face groups. *Journal of Personality and Social Psychology, 91*, 1094-1110. doi:10.1037/0022-3514.91.6.1094
- Ashford, S. J., Blatt, R., & VandeWalle, D. (2003). Reflections on the looking glass: A review of research on feedback-seeking behavior in organizations. *Journal of Management, 29*, 773-799. doi:10.1016/S0149-2063_03_00079-5
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W.H. Freeman. doi:10.1002/9780470479216.corpsy0836
- Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management, 38*, 9-44. doi:10.1177/0149206311410606
- Beck, J. M., & Schmidt, A. M. (2012). Taken out of context? Cross-level effects of between-person self-efficacy and difficulty on the within-person relationship of self-efficacy with resource allocation and performance. *Organizational Behavior and Human Decision Process, 119*, 195-208. doi:10.1016/j.obhdp.2012.06.009
- Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis methods*. Newbury Park, CA: Sage.
- Buunk, A. P., & Gibbons, F. X. (2007). Social comparison: The end of a theory and the emergence of a field. *Organizational Behavior and Human Decision Processes, 102*, 3-21. doi:10.1016/j.obhdp.2006.09.007
- Chen, G. L., & Bliese, P. D. (2002). The role of different levels of leadership in predicting self- and collective efficacy: Evidence for discontinuity. *Journal of Applied Psychology, 87*, 549-556. doi:10.1037/0021-9010.87.3.549
- Choi, J. N. (2004). Person-environment fit and creative behavior: Differential impacts of supplies-values and demands-abilities versions of fit. *Human Relations, 57*, 531-552. doi:10.1177/0018726704044308

- Choi, J. N. (2009). Collective dynamics of citizenship behavior: What group characteristics promote group-level helping? *Journal of Management Studies*, *46*, 1396-1420. doi:10.1111/j.1467-6486.2009.00851.x
- Cooley, C. H. (1902). *Human nature and the social order*. New York, NY: C. Scribner's.
- Dithurbide, L., Sullivan, P., & Chow, G. (2009). Examining the influence of team-referent causal attributions and team performance on collective efficacy: A multilevel analysis. *Small Group Research*, *40*, 491-507. doi:10.1177/1046496409340328
- Du, J., Choi, J. N., & Hashem, F. (2012). Interaction between one's own and others' procedural justice perceptions and citizenship behaviors in organizational teams: The moderating role of group identification. *Group Dynamics: Theory, Research, and Practice*, *16*, 289-302. doi:10.1037/a0028524
- Edwards, J. R. (1996). An examination of competing versions of the person-environment fit approach to stress. *Academy of Management Journal*, *39*, 292-339. doi:10.2307/256782
- Gibson, C. B., Randel, A. E., & Earley, P. C. (2000). Understanding group efficacy: An empirical test of multiple assessment methods. *Group & Organization Management*, *25*, 67-97. doi:10.1177/1059601100251005
- Gist, M. E. (1987). Self-efficacy: Implications for organizational-behavior and human-resource management. *Academy of Management Review*, *12*, 472-485. doi:10.5465/AMR.1987.4306562
- Goffman, E. (1959). *The presentation of self in everyday life*. Garden City, NY: Doubleday.
- González-Romá, V., Fortes-Ferreira, L., & Peiró, J. M. (2009). Team climate, climate strength, and team performance: A longitudinal study. *Journal of Occupational and Organizational Psychology*, *82*, 511-536. doi:10.1348/096317908X370025
- Gully, S. M., Incalcaterra, K. A., Joshi, A., & Beaubien, J. M. (2002). A meta-analysis of team-efficacy, potency, and performance: Interdependence and level of analysis as moderators of observed relationships. *Journal of Applied Psychology*, *87*, 819-832. doi:10.1037/0021-9010.87.5.819
- Hackman, J. R. (1990). Group influences on individuals in organizations. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (pp. 199-266) (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Jussim, L. (1991). Social perception and social reality: A reflection-construction model. *Psychological Review*, *98*, 54-73. doi:10.1037/0033-295X.98.1.54
- Katz-Navon, T. Y., & Erez, M. (2005). When collective- and self-efficacy affect team performance. *Small Group Research*, *36*, 437-465. doi:10.1177/1046496405275233
- Kenny, D. A., & Depaulo, B. M. (1993). Do people know how others view them? An empirical and theoretical account. *Psychological Bulletin*, *114*, 145-161. doi:10.1037/0033-2909.114.1.145
- Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals' fit at work: A meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Personnel Psychology*, *58*, 281-342. doi:10.1111/j.1744-6570.2005.00672.x

- Lee, K., & Allen, N. J. (2002). Organizational citizenship behavior and workplace deviance: The role of affect and cognitions. *Journal of Applied Psychology, 87*, 131-142. doi:10.1037/0021-9010.87.1.131
- Perry-Smith, J. E. (2006). Social yet creative: The role of social relationships in facilitating individual creativity. *Academy of Management Journal, 49*, 85-101. doi:10.5465/AMJ.2006.20785503
- Polzer, J. T., Milton, L. P., & Swann, W. B. (2002). Capitalizing on diversity: Interpersonal congruence in small work groups. *Administrative Science Quarterly, 47*, 296-324. doi:10.2307/3094807
- Rosenthal, R., & Rosnow, R. L. (1991). *Essentials of behavioral research: Methods and data analysis* (2nd ed.). New York, NY: McGraw-Hill.
- Sanders, K., Dorenbosch, L., & de Reuver, R. (2008). The impact of individual and shared employee perceptions of HRM on affective commitment: Considering climate strength. *Personnel Review, 37*, 412-425. doi:10.1108/00483480810877589
- Shrauger, J. S., & Schoeneman, T. J. (1979). Symbolic interactionist view of self-concept: Through the looking-glass darkly. *Psychological Bulletin, 86*, 549-573. doi:10.1037/0033-2909.86.3.549
- Stajkovic, A. D., Lee, D., & Nyberg, A. J. (2009). Collective efficacy, group potency, and group performance: Meta-analyses of their relationships, and test of a mediation model. *Journal of Applied Psychology, 94*, 814-828. doi:10.1037/a0015659
- Swann, W. B., Milton, L. P., & Polzer, J. T. (2000). Should we create a niche or fall in line? Identity negotiation and small group effectiveness. *Journal of Personality and Social Psychology, 79*, 238-250. doi:10.1037/0022-3514.79.2.238.
- Swann, W. B., Polzer, J. T., Seyle, D. C., & Ko, S. J. (2004). Finding value in diversity: Verification of personal and social self-views in diverse groups. *Academy of Management Review, 29*, 9-27. doi:10.5465/AMR.2004.11851702
- Thatcher, S. M. B., & Greer, L. L. (2008). Does it really matter if you recognize who I am? The implications of identity comprehension for individuals in work teams. *Journal of Management, 34*, 5-24. doi:10.1177/0149206307308909
- Vroom, V. H. (1964). *Work and motivation*. New York, NY: Wiley.

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