Do Shared Goals Really Enhance Team Innovation? A Review

Majdi Anwar Quttainah
College of Business Administration, Kuwait University, Safat, Kuwait

This study aims to uncover the missing link between shared goals and team innovation. Previous literature reflects positive direct effects of shared goals on team innovative performance. This research serves as supplement to past studies. Minority dissent, teamwork behavior and team potency are introduced as mediators and knowledge diversity, climate for innovation and environmental dynamism as the mechanisms moderating the relationship between shared goals and team innovation. Contrary to previous studies, present review proposes that instead of only positive direct effect, shared goals may produce direct and indirect negative effects on team innovation. Specifically, under dynamic environment, shared goals may have little impact on innovation. In addition, shared goals may lead to less frequent occurrence of minority dissent, while minority dissent has proven positive impact on team innovation, especially in R&D teams.

Keywords: Shared goals, team goals, team innovation, teamwork behavior, dynamic environment

JEL: D23, O32

In today's knowledge-based competitive economy, innovation has become an imperative element for survival of firms. Despite the growing interest in multidisciplinary innovation research, firms' innovating mechanisms are still being described as the black box (Rosenberg, 1994). Besides, literature increasingly indicates that innovation is, to the large extent, the outcome of team work (Edmondson, 2002), and many organizations are evolving into team-based structures (Bain *et al*. 2001; Drach-Zahavy and Somech, 2001; Hoegl and Gemuenden, 2001; Pearce and Ensley; 2004). Team members continuously interact to share knowledge and information to create innovative outcomes. Among various types of work teams, research and development (R&D) teams are mostly responsible for organization's innovative success. However, team process within R&D teams is still very much unexplored.

The development of innovation is a complex task. It is obvious that a team is more capable of carrying such task as opposed to individuals. Nevertheless, team innovation is not simply a sum of individual innovations. Therefore, we need to understand a team process in which individual creativity is brought into use (Tagger, 2002). Organizational theorists try to examine various determinants that influence team process and team performance (including innovative performance). Among such determinants, team's shared mental models recently received significant theoretical consideration (e.g. Kraiger and Wenzel, 1997; Mathieu *et al*., 2000). Shared mental models refer to team's common knowledge structure that allows team members to

describe, explain, predict and enact in certain environment consistently with their teammates (Mathieu *et al.*, 2000). Previous empirical investigations confirmed that certain types of shared mental model convergence of team were the prerequisites to high performing teams (McIntyre and Salas, 1995; Mathieu *et al.*, 2000).

Literature shows a positive relationship between shared mental models and team innovation (Pearce and Ensley, 2004), and between team member's shared perception and commitment on team goals and team innovation (Anderson and West, 1996; Anderson and West, 1998; Bain *et al.*, 2001; Curral *et al.*, 2001). However, little is known about the mechanism in which shared mental models or shared perceptions and commitment to team goals affect team innovation. To be concrete, the high level of shared mental model may lead team members to think and rationalize in the same way. Such convergent thinking process, described by Janis (1982) as the symptom of groupthink, may impair team decision-making and result in poor performance. Especially, R&D teams often face with difficult situations where divergent thinking is essential. Therefore, without looking into the mechanism, we may neglect the possible opposing (negative) effect of shared mental models on team innovation.

This research intends to theoretically illustrate a moderators-mediators model that associates "shared goals" with "team innovation". Borrowing heavily from existing research on shared mental model (Mathieu *et al.*, 2000; Pearce and Ensley, 2004) and goal consensus (Anderson and West, 1998; Colbert *et al.*, 2008;

Pearce and Ensley, 2004), I *define shared goals as " a common mental model of the importance of team goals, which serves as the basis for action within the team"*. In other words, the theory focuses on a specific aspect of shared mental model, viewing shared goals as the shared knowledge of team goals that guides team members to behave in accordance with the goals.

Literature dealing with innovation indicates positive direct effects, and this paper argues that shared goals may produce direct and indirect opposing (negative) effects on team innovation. Shared goals, in a systematically dynamic environment, may become less effective process toward innovation. In fact, shared goals may lead to frequently less occurrences of minority dissent, which was empirically found to have positive impact on team innovation, precisely in R&D teams. The purpose of this research is twofold. First, it will enable us to find the mechanisms involved in the relationship between shared goals and team innovation. Second, it intends to challenge the traditional theory and empirics that shared goals may only positively associate with team innovation, which suggests that certain situation (i.e. dynamic environment) and certain team process mediator (i.e. minority dissent) can inverse or worsen the positive relation between shared goals and team innovation.

Shared Goals and Team Innovation

Research in strategic management has long been interested in "fit" or "agreement" upon organizational goals ("the ends") and plan of actions ("the means") (Bourgeois, 1980; Dess, 1987). This paradigm argues that fit or

"strategic consensus" leads to better organization performance. For example, Dess (1987) studied the consensus between 74 top management team members from 17 firms. He found that top management team's consensus on either company's objectives (goals) and company's competitive methods (means) were associated with positive performance. Operations researchers also borrowed the concept of strategic consensus and found that the consensus in operations strategy at manufacturing unit performance is associated with unit performance (see Boyer and McDermott, 1999; Homburg et al., 1999). As the need to study the relationship between team process and team performance has been increasingly emphasized in organizational behavior literature, the concept of strategic consensus was also adopted. Colbert et al. (2008) studied the role of within-team goal consensus as the mediator of the relationship between transformational leadership and organizational performance. They found out that CEO transformational leadership was positively related to within-team goal consensus, and that consensus was positively related to organizational performance.

However, consensus or agreement upon goals was not an alien concept in organizational behavior research. At individual level, researchers interested in person-organization and person-team fits have examined whether person-organization and person-team goal congruence may affect individual performance (Kristof-Brown et al. 2005; Kristof-Brown and Stevens, 2001; Vancouver and Schmitt, 1991). For example, Kristof-Brown and Stevens (2001) studied how

congruence in personnel and perceived team mastery and performance goal affect individual performance. Collecting data from 324 members of 64 short term project teams, they found that congruence on performance goals was related to greater individual satisfaction. At the team-level, organizational behavior researchers have long been addressing the issue of "shared mental models". They were interested in how team's common knowledge may affect team performance. For example, Mathieu et al. (2000) examined the influence of teammates' mental models on team process and performance. Based on Cannon-Bowers (1993), they argued that, rather than a single mental model that team members must share, there coexist multiple mental models at a given point of time, for instance, task mental model, team interaction mental model, and technology mental model. In their study, they distinguished between task mental model, covering knowledge content such as task procedures and task strategies, and team mental model, covering knowledge content such as teammate's knowledge and teammate's attitude. They found that both types of shared mental models were positively related with team process (e.g. teamwork interaction) and team performance. They also found that team process fully mediated the relationship between shared mental models and team performance.

It is noteworthy to mention a fundamental difference between consensuses and shared mental model researches, and this present study defined "shared goals" from a specific aspect of shared mental model. While, goal consensus (or congruence) research measures the degree to

which team members agree upon team objectives (thus viewing team members as goals takers), shared goals measure the degree to which team member comprehend about team goals and behave according to that goal (thus viewing team members as both goals takers and goals users). Pearce and Ensley (2004) studied the relationship between a particular aspect of shared mental model, so-called shared vision, and team innovation. In the study of product and process innovation teams, they found that "shared vision", defined as "a common mental model of the future state of the team or its tasks that provides the basis of actions within teams" was positively, reciprocally, and longitudinally associated with innovation effectiveness. In other words, innovation effectiveness strengthens members' agreement upon purpose of the team, which subsequently leads to the greater innovation effectiveness. Michael West and his colleagues (Anderson and West, 1996; 1998; West *et al.* 2003) developed a multifaceted scale of team process. For one facet, they looked at the relationship between shared vision (they called it "vision" or "clarity of and commitment to team objectives") and team innovation, although there was still no strong evidence to support such relationship (West and Anderson, 1996; Anderson and West, 1998; Bain *et al.*, 2001).

Furthermore, in a related consensus-team innovation study, we can observe that "consensus" or "employees' shared perception" is related to team performance. Lovelace, Shapiro and Weingart (2001) studied

the relationship between intra-team task disagreement (as opposed to team agreement) and team innovativeness and found a significant negative relationship between the two. West *et al.* (2003) found that leadership clarity (i.e. team member's consensual perceptions of clarity and no conflict over leadership of their teams) was positively related to team innovation. Drawing upon all literatures from strategic management, operations strategy and organizational behavior discussed above, we can expect that shared goals can be considered as a precursor of team innovation.

Moderators

Multidisciplinary theories suggest several attributes that may influence the team process and team performance From extensive review of literatures, I identify three possible moderating constructs that seem most relevant in the context of R&D teams, including within-team level factors (knowledge diversity and team support for innovation) as well as organization and environment factor (environmental dynamism). This section provides the discussion on the moderating role of these attributes on goal congruence-team innovation relationship.

-Knowledge Diversity

Team diversity refers to many dimensions, yet; most of these dimensions fall into two categories, namely demographic diversity (e.g. age, gender, culture and nationality) and functional diversity (e.g. task, background knowledge and area of specialization). Different organization theories predict the effect of diversity on team performance differently. On one hand, social identity theory suggests that

heterogeneities in social background of team members deteriorate the effectiveness of team interaction, thus leading to suboptimal performance (Tajfel, 1982, Polzer *et al.*, 2002). On the other hand, value-in-diversity theory suggests that diversity improves scope of knowledge and skills within teams and enables teams to deal with problems more effectively (Jehn *et al.*, 1999; Polzer *et al.*, 2002). Empirical results exemplified these conflicting views, showing positive and negative effects of team diversity on team process and team performance (Ancona and Caldwell, 1992; Schippers *et al.*, 2003). Therefore, to make this study sufficiently meaningful and relevant to R&D team context, the focus will be on a specific dimension of diversity – the knowledge diversity – since R&D teams typically compose of persons with multiple knowledge and skills. In this study, I define knowledge diversity as "the degree to which knowledge, skills and experiences among team members vary".

Previous studies found a significant correlation between knowledge diversity and both shared goals (Knight *et al.*, 1999) and team performance (Polzer *et al.*, 2002; Taylor and Greve, 2006). Particularly, Taylor and Greve (2002) found that teams with multiple domains of knowledge and experiences outperform teams with fewer domains of knowledge and experiences. They also found that by increasing teamwork interactions, teams were able to enhance the level of creative performance. Furthermore, Polzer *et al.* (2002) implied that the interaction between functional diversity, computed largely by knowledge diversity scales, and congruence of

team's member ideas (intrapersonal congruence) was positively related to some performance measures. Studies also suggest that most innovative companies established heterogeneous team with diversified knowledge to avoid the symptom of groupthink (Horwitz, 2005; Janis, 1982).

-Climate for Innovation

"Climate" has been consistently receiving theoretical attention in organizational research. Though scholars varied in defining climate, one widely accepted view see climate as "shared perceptions of organizational policies, practices, and procedures, both formal and informal" (Schneider, 1990: 22). Schneider (1975), however, argued that the "global view" of climate may be too broad and too multifaceted. Rather, he proposed that climate should be measured as a facet-specific construct. In other words, climate should be measured with a particular referent (e.g. climate for innovation, climate for change, etc) (Schneider and Reichers, 1983). Siegel and Kaemmerer (1978) developed a facet-specific climate for innovation construct to measure shared perception of employee on support of innovation at organizational level. Anderson and West (1998), however, argued that climate of innovation can vary across teams. Thus, they modified Siegel and Kaemmerer (1978), climate for innovation to assess team level attributes rather than organizational level attributes. Climate that supports innovation can be defined as "the expectation, approval and practical support to introduce new and improved ways of doing things in the work environment" (West, 1990: 38 *c.f* Anderson and West, 1998).

Studies that utilized climate for innovation constructs at both organization level and team level reported a strong argument in support of a positive relationship between climate for innovation and innovative performance (Howell and Avolio, 1993; Bain *et al.*, 2001; West and Anderson, 1996; Curral *et al.*, 2001). Furthermore, a recent study by Jung *et al.* (2008) found a significant moderating effect of climate for innovation on the relationship between transformational leadership and firm innovation. Thus, a moderating effect of climate for innovation can be expected on the relationship between shared goals and team innovation.

−Environmental Dynamism

R&D teams need to response to the rapid changes in environmental conditions, as speed of innovation is as important as innovation itself. Fierce competition in innovations makes products obsolete faster and adds uncertainties to the firm, as well as directly to R&D teams. Environmental dynamism refers to the rate of unpredictability of change in a firm's external environment (Dess and Beard, 1984). The evidence that environmental dynamism may have moderating effect on shared goals and team innovation came from Homburg *et al.* (1999), in which they found that strategic consensus did not always lead to positive organizational outcomes. Besides, they found that environment uncertainty moderated the relationship between strategic consensus and performance. In recent leadership research, Jansen *et al.* (2009) found that the environmental dynamism significantly moderates the negative relationship between transformational leadership and exploitative

innovation. Taken together, the results from previous studies implied that a high level of shared goals may be less relevant to team innovative performance in dynamic environment (as opposed to stable environment). In other words, shared goals, to a certain degree, represent convergent thinking process of team members. Besides, under dynamic environment, teams may need to think divergently to overcome unfamiliar puzzles.

Mediators

Various dimensions of team process mediators the relationship between shared goals and team innovation. From the extensive literature search, I identify three types of team process, including minority dissent, teamwork behavior and team potency, possibly mediate the relationship between shared goals and team innovative performance.

−Minority Dissent

Minority dissent occurs when a minority in a team expresses doubts or disagreements against a majority's beliefs, attitudes, ideas, procedures, and policies (Asch, 1956; De Dreu and West, 2001; De Dreu, 2002). Recent studies showed that minority dissent may be productive and beneficial, since it increases the likelihood of creative and divergent thinking (De Dreu and Beersma, 2001; Van Dyne and Saavadra, 1996). Building upon same argument De Drue and West (2002) and De Dreu (2002) hypothesized that minority dissent would be positively related to team innovation. They found that minority dissent would predict innovation in teams but only when teams have high level of participation in decision-making (De Dreu and West, 2001) or when teams

have high level of team reflexivity (De Dreu, 2002). I further argue that minority dissent decreases as shared goals increases. By definition, higher level of shared goals means higher level of team members' commitment to team goals. To a certain degree, higher commitment represents a rise in the level of group cohesiveness, which in turn increases the likelihood that nonconforming opinion by the minority may be restrained or even dismissed (Mullen and Copper, 1994; Janis, 1972). Therefore, the minority dissent, when controlling for level of participation in decision-making process, may serve as a team process that will partially mediate the relationship between shared goals and team innovation.

-Teamwork Behavior

Teamwork behavior is defined as " the ability of team members to coordinate with other team members to accomplish the task" (Stevens and Campion, 1994). Previous studies linked teamwork behavior to both shared mental model and team performance. Pearce and Ensley (2004) found that shared vision is positively and reciprocally related to teamwork behavior. They argued that shared vision might enhance team members' ability to cooperate with each other thus results in higher level of productivity. Several studies have found that teamwork behavior is positively related to innovation (Amabile *et al.*, 1996; Pirola-Merlo *et al.*, 2002). In a recent study, Drach-Zahavy and Somech (2004) factorized teamwork behavior into four dimensions; learning, motivating, negotiating and exchanging information. However, they found that only learning is significant predictor of team

innovation. In contrast, Hoegl and Gemeuden (2001) developed a teamwork construct, called Teamwork Quality (TWQ) that encompasses six facets of teamwork, including communication, coordination, balance of member contributions, mutual support, effort, and cohesion, with all facets highly loaded on the construct. They found that TWQ was positively associated with team innovative performance. Studies perceive teamwork behavior as result of both a shared mental model (shared vision) and antecedent to team innovation that positively influence teamwork behavior that may mediate the relationship between shared goals and team innovation.

-Team Potency

Team potency is defined as a team's shared belief that it can be effective (Guzzo *et al.*, 1993). At the individual level, research reflects that self-efficacy determines the extent to which individual is willing to exert efforts to tackle with obstacles in order to achieve future benefits (Bandura, 1982). In analogous, at the team level, team potency determines the extent to which team effort is spent to resolve problems in order to achieve team goals. With team potency raising the level of motivation, team is capable of achieving higher performance (Campion *et al.*, 1996; Lester *et al.*, 2002). Pearce and Ensley (2002) argued that a team's shared vision should enhance positive beliefs about team's abilities. Team's shared vision (or shared goals) in the present study, signals a greater understanding and commitment of team goals among team members and thus should raise the members' shared belief that goals are

attainable. Empirically, Pearce and Ensley (2002) found that shared vision is positively and reciprocally associated with team potency.

antecedents. Secondly, as Pearce and Ensley (2004) proved that the relationship between shared mental model and team innovation is
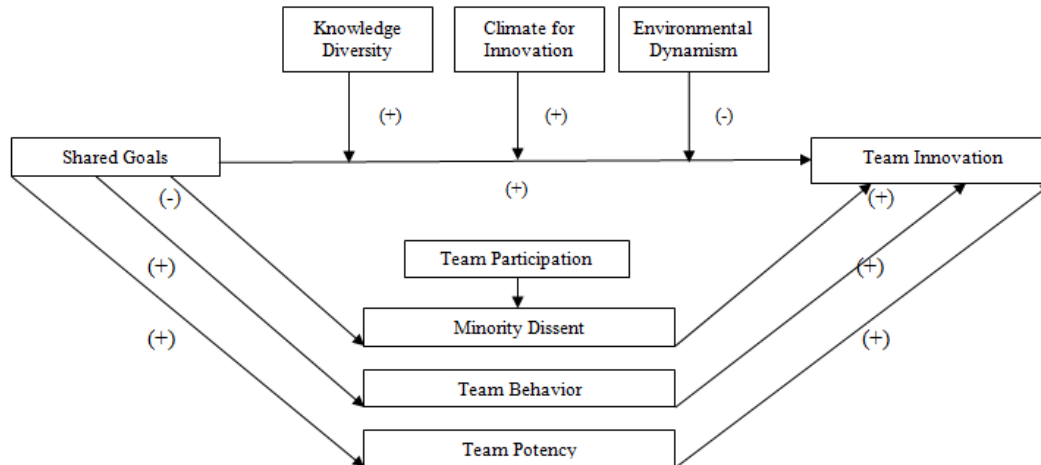

Figure 1: Moderators-Mediators Model of Shared Goals and Innovation

CONCLUSION AND FUTURE DIRECTIONS

This research realized the importance of shared goals for teams because it may be a critical antecedent to other team processes and innovation. However, little is known about the channels in which shared goals affect subsequent team processes and innovative performance. Using a mediator–moderator model, this study attempts to unveil the mechanism linking shared goals with team innovation.

From the practical standpoint, teams, especially R&D teams that are explored in this study, are becoming more and more important part of modern organizations. However, little is known about how teams develop and interact. This research will help to understand team process as well as how teams should be organized in order to enhance performance.

There are still several foreseeable limitations to this research. Firstly, this research did not try to examine the antecedents of shared goals. Futures studies should explore these

reciprocal and longitudinal, which requires further studies to be explored. Lastly, there may be other potential moderators and mediators for shared goals that this research may not have covered yet.

REFERENCES

Amabile, T. M., Conti, R., Coon, H., Lazenby, J. & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 39(5): 1154–1184.

Anderson, N. R. & West, M. A. (1996). The Team Climate Inventory: Development of the TCI and its applications in teambuilding for innovativeness. *European Journal of Work and Organizational Psychology*, 5(1): 53–66.

Anderson, N. R. & West, M. A. (1998). Measuring climate for work group innovation: Development and validation of the team climate inventory. *Journal of Organizational Behavior*, 19(3): 235–258.

Ancona, D. G. & Caldwell, D. F. (1992). Demography and design: Predictors of new product team performance. *Organization Science*, 3(3): 321–341.

Asch, S. E. (1956). Studies of independence and conformity: I.A minority of one against a unanimous majority. *Psychological Monographs: General and Applied*, 70(9): 1–70.

Bain, P. G., Mann, L. & Pirola–Merlo, A. (2001). The innovation imperative: The relationships between team climate, innovation, and performance in research and development teams. *Small Group Research*, 32(1): 55–73.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122–147.

Bourgeois, L. J. (1980). Performance and consensus. *Strategic Management Journal*, 1(3): 227–248.

Boyer, K. K. & McDermott, C. (1999). Strategic consensus in operations strategy. *Journal of Operations Management*, 17(3): 289–305.

Campion, M. A., Papper, E. M. & Medsker, G. J. (1996). Relations between work team characteristics and effectiveness: A replication and extension. *Personnel Psychology*, 49, 429–452.

Cannon–Bowers, J. A. (1993). Shared mental models in expert team decision making. In N. J. Castellan, Jr. (Ed.), *Current issues in individual and group decision making*: 221–246. Hillsdale: Erlbaum.

Colbert, A. E., Kristof–Brown, A. L., Bradley, B. H. & Barrick, M. R. (2008). CEO transformational leadership: The role of goal importance congruence in top management teams. *Academy of Management Journal*, 51(1): 81–96.

Curral, L.A, Forrester, R.H, Dawson, J.F, & West, M.A. (2001). It's what you do and the way you do it: Team task, team size, and innovation–related group processes. *European Journal of Work and Organizational Psychology*, 10(2): 187–204.

De Dreu, C.K.W. (2002). Team innovation and team effectiveness: The importance of minority dissent and reflexivity. *European Journal of Work and Organizational Psychology*, 11(3): 285–298.

De Dreu, C. K. W. & West, M. A. (2001). Minority dissent and team innovation: The importance of participation in decision making. *Journal of Applied Psychology*, 86(6): 1191–1201.

De Dreu, C.K.W., & Beersma, B. (2001). Minority influence in organizations: Its origins and implications for learning and group performance. In C.K.W. De Dreu & N.K. De Vries (Eds.), *Group consensus and innovation*: 258–283. Oxford: Blackwell.

Dess, G.G. (1987). Consensus on strategy formulation and organizational performance. *Strategic Management Journal*, 8, 259–277.

Dess, G.G. & Beard, D.W. (1984). Dimensions of organization task environments. *Administrative Science Quarterly*, 29, 52–73.

Drach–Zahavy, A. & Somech, A. (2001). Understanding team innovation: The role of team processes and structures. *Group Dynamics: Theory, Research, and Practice*, 5(2): 111–123.

Drach-Zahavy, A., Somech, A., Granot, M. & Spitzer, A. (2004). Can we win them all? Benefits and costs of structured and flexible innovation implementations. *Journal of Organizational Behavior*, 25(2): 217–234.

Edmondson, A.C. (2002). The local and variegated nature of learning in organizations: A group level perspective. *Organization Science*, 13, 128–146.

Guzzo, R.A, Yost, P.R, Campbell, R.J. & Shea, G.P. (1993). Potency in groups: Articulating a construct. *British Journal of Social Psychology*, 32(1): 87–106.

Hoegl, M. & Gemuenden, H.G. (2001). Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence. *Organization Science*, 12(4): 435–449.

Homburg, C., Krohmer, H. & Workman, J. (1999). Strategic consensus and performance. *Strategic Management Journal*, 20, 339–357.

Horwitz, S.K. (2005). The compositional impact of team diversity on performance: A theoretical consideration. *Human Resource Development Review*, 4(2): 219–245.

Howell, J.M. & Avolio, B.J. (1993). Transformational leadership, transactional leadership, locus of control, and support for innovation: Key predictors of consolidated business unit performance. *Journal of Applied Psychology*, 78, 891–902.

Janis, I. L. (1982). *Groupthink: Psychological studies of policy decisions and fiascoes (2nd ed.)*. Boston: Houghton Mifflin.

Jehn, K. A., Northcraft, G. B. & Neale, M. A. (1999). Why differences make a difference: A field study of diversity, conflict and performance in workgroups. *Administrative Science Quarterly*, 44(4): 741–763.

Jung, D. D., Wu, A. & Chow, C. W. (2008). Towards understanding the direct and indirect effects of CEOs' transformational leadership on firm innovation. *The Leadership Quarterly*, 19(5): 582–594.

Knight, D., Pearce, C. L., Smith, K. G., Olian, J. D., Sims, H. P., Smith, K. A. & Flood, P. (1999). Top management team diversity, group process, and strategic consensus. *Strategic Management Journal*, 20(5): 445–465.

Kraiger, K. & Wenzel, L. H. (1997). A framework for understanding and measuring shared mental models of team performance and team effectiveness. In E. Salas, M. T. Brarmick, & C. Prince (Eds.), *Team performance assessment and measurement: Theory, methods, and applications*: 63–84. Hillsdale: Erlbaum.

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(2): 281–342.

Kristof–Brown, A. L. & Stevens, C. K. (2001). Goal congruence in project teams: Does the fit between members' personal mastery and performance goals matter? *Journal of Applied Psychology*, 86(6): 1083–1095.

Lester, S. W., Meglino, B. M. & Korsgaard, M. A. (2002). The antecedents and consequences of group potency: A longitudinal investigation of newly formed work groups. *Academy of Management Journal*, 45(2): 352–368.

Lovelace, K., Shapiro, D. L. & Weingart, L. R. (2001). Maximizing cross–functional new product teams' innovativeness and constraint adherence: A conflict communications perspective. *Academy of Management Journal*, 44(4): 779–793.

Mathieu, J. E., Heffner, T. S., Goodwin, G. F., Salas, E. & Cannon–Bowers, J. A. (2000). The influence of shared mental models on team process and performance. *Journal of Applied Psychology*, 85(2): 273–283.

McIntyre, R. M. & Salas, E. (1995). Measuring and managing for team performance: Emerging principles from complex environments. In R.A. Guzzo & E. Salas (Eds.), *Team effectiveness and decision making in organizations*: 9–45. San Francisco: Jossey–Bass.

Mullen, B. & Copper, C. (1994). The relation between group cohesiveness and performance: An integration. *Psychological Bulletin*, 115(2): 210–227.

Pearce, C. L. & Ensley, M. D. (2004). A reciprocal and longitudinal investigation of the innovation process: The central role of shared vision in product and process innovation teams. *Journal of Organizational Behavior*, 25(2): 259–278.

Pirola–Merlo, A., Härtel, C., Mann, L. & Hirst, G. (2002). How leaders influence the impact of affective events on team climate and performance in R&D teams. *The Leadership Quarterly*, 13(5): 561–581.

Quttainah

Polzer, J. T., Milton, L. P. & Swarm, W. B. (2002). Capitalizing on diversity: Interpersonal congruence in small work groups. *Administrative Science Quarterly*, 47(2): 296–324.

Rosenberg, N. (1994). *Exploring the black box: Technology, economics, and history*. Cambridge: Cambridge University Press.

Schippers, M. C., Den Hartog, D. N., Koopman, P. L. & Wienk, J. A. (2003). Diversity and team outcomes: The moderating effects of outcome interdependence and group longevity and the mediating effect of reflexivity. *Journal of Organizational Behavior*, 24(6): 779–802.

Schneider, B. (1990). Organizational climate and culture. San Francisco: Jossey Bass.

Schneider, B. & Reichers, A. E. (1983). On the etiology of climates. *Personnel psychology*, 36(1): 19–39.

Schneider, B. (1975). Organizational climates: An essay. *Personnel Psychology*, 28, 447–479.

Siegel, S. M. & Kaemmerer, W.F. (1978). Measuring the perceived support for innovation in organizations. *Journal of Applied Psychology*, 63(5): 553–562.

Stevens, M.J. & Campion, M.A. (1994). The knowledge, skill, and ability requirements for teamwork: Implications for human resource management. *Journal of Management*, 20(2): 503–531.

Tagger, S. (2002). Individual creativity and group ability to utilize individual creative resources: A multilevel model. *Academy of Management Journal*, 45, 315–330.

Tajfel, H. (1982). Social psychology of inter-group relations. *Annual Review of Psychology*, 33, 1–39.

Taylor, A. & Greve, H. (2006). Superman or fantastic four? Knowledge combination and experience in innovation teams. *Academy of Management Journal*, 49(4): 723–740.

Vancouver, J.B. & Schmitt, N.W. (1991). An exploratory examination of person-organization fit: Organizational goal congruence. *Personnel Psychology*, 44, 333–351.

Van Dyne, L. & Saaverda, R. (1996). A naturalistic minority influence experiment: Effects on divergent thinking, conflict, and originality in work-groups. *British Journal of Social Psychology*, 35, 151–168.

West, M. A. (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology*, 51(3): 355–387.

West, M.A. & Anderson, N. (1996). Innovation in top management teams. *Journal of Applied Psychology*, 81, 680–693.

West, M.A., Borrill, C.S., Dawson, J.F., Brodbeck, F.C., Shapiro, D.S. & Haward, B. (2003). Leadership clarity and team innovation in health care. *Leadership Quarterly*, 14, 393–410.