

Dissertation Defense

**Cognitive Style Diversity in Teams**

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In this dissertation, I undertake the study of cognitive styles in teams in three papers. Cognitive styles are psychological dimensions that represent consistencies in how individuals acquire and process information, and guide their performance on information processing, decision making, problem solving, and creativity tasks. In addition, they distinguish between individuals from different educational and functional areas. They constitute an important, though largely underrepresented, area of team research. I investigate the relationship between cognitive style diversity and team performance on tasks that impose different demands on teams—execution and creativity. Across the three papers, I identify important processes such as strategic focus, strategic consensus, transactive memory, and learning that further explicate this relationship. The studies move the ongoing debate about whether and how diversity is beneficial and detrimental to team performance forward by exploring task contexts that benefit from diversity, and those that do not. In the final paper, I highlight one effective way to optimize the opposing forces that make diversity a challenging phenomenon to study, thus attempting to move the debate toward a resolution.

In the first paper, I investigate the effect of members' cognitive styles on team processes that affect errors in execution tasks. In two laboratory studies, I investigate how a team's composition (members' cognitive styles related to object and spatial visualization) affects the team's strategic focus and strategic consensus, and how those affect the team's commission of errors. Errors have crucial implications for many real-life organizational teams carrying out execution tasks. Study 1, conducted with 70 dyads performing a navigation and identification task, established that teams high in spatial visualization are more process-focused than teams high in object visualization. Process focus, which pertains to a team's attention to the details of conducting a task, is associated with fewer errors. Study 2, conducted with 64 teams performing a building task, established that heterogeneity in cognitive style is negatively associated with the formation of a strategic consensus, which has a direct and mediating relationship with errors.

In the second paper, I investigate the effect of members' cognitive styles, and related team processes, on creativity. Creativity encompasses the processes leading to the generation of novel and useful ideas. In a study with 112 graduate-student teams working on a semester-long project, I study the effect of team composition based on members' cognitive styles on the team's transactive memory and strategic consensus, and find that both these processes are affected by cognitive style composition of the team. I also find that TMS is positively related to two aspects of creativity: flexibility and fluency. Strategic consensus, too, is moderated by process focus in affecting the third aspect of team creativity: originality. The study provides a nuanced

understanding of how diverse inputs, but integrating processes, benefit team creativity.

In the third paper I highlight that cognitive diversity in teams is associated with both benefits and costs, and increasing the benefits linked with having a greater wealth of human resources without increasing the associated coordination costs is a challenge. In this paper, I provide a new lens for looking at team composition in terms of this cost-benefit tradeoff, and propose one way to optimize it. I study how cognitive resources are distributed in teams, emphasizing both breadth and depth, and investigate the influence of versatile team members, or members who encompass depth in a breadth of domains. In two studies, I find evidence for the proposition that the number of cognitively versatile members in the team is positively associated with team performance in execution tasks, explaining variance above and beyond standard and non-standard ways of capturing diversity. Interestingly, I find that while there is generally a curvilinear (inverted U-shaped) relationship between team size and team performance, there is a positive linear relationship between size and performance in teams that have cognitively versatile members. I also find that the positive impact of cognitively versatile members on performance in execution tasks is facilitated by process learning. I discuss the implications of this alternative way of viewing diversity.

Taken together, this dissertation explores team composition using deep-level diversity variables that directly relate to functional areas of individuals in organizations. The three papers contribute to an underrepresented area of organizational research, and establish the importance of the team's cognitive style composition to team performance. Also, by addressing many calls in the groups and teams research literature, this dissertation aims at providing a nuanced understanding of composition, processes and performance in teams, revealing the complexity of teamwork.