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Creating high performance teamwork in organizations

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A B S T R A C T

The adoption of teams continues to increase in almost every domain of modern work life. In the current article we review evidence of the complexity of modern work, industry trends in the use of teams, and the challenges of achieving the full potential of organizational work teams. We aimed to meaningfully move forward the science of high performance teamwork by assembling a focused set of review articles in the present special issue. We consider four themes that capture the articles in this special issue and avenues for achieving the full potential of teams: (1) work across boundaries; (2) build effective team processes and states; (3) manage team development issues; and (4) leverage human capital. Collectively, the contents of this special issue offer important new opportunities for advancing future research and for making a practical difference in the effectiveness of teams in organizations. We identify six areas in which future research efforts in high performance teamwork should be directed based on “realities” that, in our view, need to be addressed.

1. Introduction

When we set out to create this special issue, we had one goal in mind: To meaningfully move forward the science and practice of high performance teamwork. Why does this matter? The adoption of teams continues to increase in almost every domain of modern work life (Cross, Rebele, & Grant, 2016). Problems facing the world and organizations are so complex that collaboration among individuals with common objectives is fundamental (Salas, Shuffler, Thayer, Bedwell, & Lazzara, 2015). We know that teamwork matters, as effective teamwork is related to innovation, safety, fewer errors, and saving lives (e.g., Hughes et al., 2016; Hülsheger, Anderson, & Salgado, 2009). Yet, high performance teamwork is difficult to achieve and most teams fail to reach their full potential (and many fail dismally; Hackman, 1998). This lost potential manifests itself by inhibiting with a variety of key teamwork metrics, such as low engagement, innovation, scientific advancement, productivity, quality, competitiveness, and so on. In this special issue, we sought to advance current knowledge of team effectiveness, produce fruitful research agendas for future empirical studies, and provide useful implications for practitioners challenged with teamwork issues.

In this introduction to the special issue, we begin with an overview of high performance teamwork involving the need for teamwork and recent industry trends in the use of teams. Next, we discuss four avenues to harness the lost potential of teams based on themes of the articles in the current special issue. We conclude with a statement about how the articles in this special issue will help the field move forward.

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2. High performance teamwork

2.1. Defined

High performance teamwork means several things (Hackman, 1987). First, teams must deliver on stakeholder objectives at the highest level of quality. Second, teams must mature into increasingly capable work units over time. Third, teams must enable their members to continuously develop and grow their capabilities over time. This definition of high performance teamwork is intentionally broad and global, as teams can be productive but, if they do not maintain viability, their members will eventually burn out (Sundstrom, De Meuse, & Futrell, 1990).

2.2. Challenges

There is a litany of challenges involved in achieving and maintaining high performance teamwork. Wageman, Nunes, Burruss, and Hackman (2008) reported that only 21% of leadership teams are performing at an outstanding level and that 42% of teams are performing poorly. Hackman's (1990) book titled "Groups that work (and those that don't)" illustrated a plethora of difficulties and obstacles across a wide variety of team types. According to Steiner (1972) teams suffer from process loss, as their total output will be a function of the team's potential minus coordination costs. Furthermore, teams tend to procrastinate more on tasks than do individuals (Chang, Bordia, & Duck, 2003; Gersick, 1988). Dealing with the realities of coordinating a multi-team system, the need to span boundaries, and the importance of aligning strategically across the organization raises another increasingly critical, but vital, set of issues to address (Ancona & Caldwell, 1992). Thus, there are many difficulties in achieving high performance teamwork; clearly, there is a lot of work for researchers and practitioners ahead.

2.3. Complexity of work

If high performance teamwork is so difficult, why don't we look for alternative structures to accomplish work and objectives? The answer is that in the pursuit of excellence, it is difficult to imagine making much more progress on modern business and scientific challenges without several brains and bodies working in unison (Salas et al., 2015). There are several examples of huge initiatives with enormous complexity that require a team-based approach. The Buzz Aldrin Space Institute, NASA, SpaceX, and others are currently formulating plans for not just a mission to Mars, but an occupation and colonization (Salas et al., 2015). Tesla is attempting to create a fleet of automobiles that will be powered completely by the sun, and power stations that will be completely free to the consumer. Amazon is attempting to deploy a drone force so huge and efficient that packages can be delivered to doorsteps within hours of receiving the orders. Healthcare providers are testing resuscitation and rapid response interdisciplinary teams to better rescue and save critically-ill patients (Jones, DeVita, & Bellomo, 2011). Apple made a goal of installing entire music collections, traditionally stored on records, cassettes, and CDs, into small electronic handheld devices (i.e., the iPod). Military operators are seeking to anticipate and adapt to dynamic changes in enemy behavior through highly coordinated and empowered multi-team systems to combat terrorism (McChrystal, Collins, Silverman, & Fussell, 2015). Scientists are working on problems so complex that highly specialized experts in disciplines and sub-disciplines need to collaborate in order to continue generating knowledge and solving problems (indeed, team patents and research articles are increasing, Wuchty, Jones, & Uzzi, 2007). Entrepreneurial ventures are launching in numbers greater than ever before, given the flattened world created by technology and the Internet of Things. To innovate and compete with the catalogue of other start-ups, these ventures are much more likely to be team-based rather than sole proprietorships (Pennanen, 2016). It should be obvious that teams will be necessary to achieve such endeavors.

2.4. Industry trends

What do recent industry reports say about the use of teamwork? KPMG's (2012) report indicates that "people collaborating with each other to achieve common business objectives is a fundamental prerequisite to create optimization (p. 12)." According to Deloitte's (2016) *Global Human Capital Trends* industry report, 45% of organizations are restructuring around teams and multi-team systems. Ernst and Young's (2012) report concluded that "diversity...improves both financial performance and reputation (p.20)," calling for interdisciplinary teams. Gallup's (2017) report on performance management calls for team reflexivity, which they suggest "occurs when teams regularly review recent performance so they can work together more cohesively in the future (p. 24)." According to a McKinsey report, even at the top levels of an organization, developing an effective team is highly dependent on the soft skills of individual members. The report concluded that "the soft stuff matters – and is hardest to get right" (Keller, Kruyt, & Malan, 2010, p. 4). Teamwork matters in healthcare, space exploration, aviation, oil and gas, military and in the corporate world. The reality is that teams are needed, they are here to stay, and we need to know a lot more about how to design and deploy them to achieve their full potential.

3. Harnessing the full potential of teams

The contents of the special issue form four themes. Each theme represents a potential set of strategies for helping teams to achieve their full potential: (1) work across boundaries; (2) build effective team processes and states; (3) manage team development issues; and (4) leverage human capital. Below we offer highlights from each article represented in these themes.

3.1. Work across team boundaries

Recognizing that teams interacting with other teams might be just as important as within-team interactions (Ancona & Caldwell, 1992; Mathieu, Marks, & Zaccaro, 2001), three articles examined current issues with respect to working across boundaries and understanding multi-team systems. Rico, Hinsz, Davison, and Salas offer a model of the emergence of coordination processes (implicit versus explicit) across teams in a multi-team system. The model examines levels of interdependence among component teams across hierarchical versus lateral integration mechanisms. This can help to understand why implicit or explicit coordination processes emerge both within and across teams, and how the interdependence levels and integration mechanisms operate simultaneously to affect multi-team system performance.

Edmondson and Harvey develop a new model of cross-boundary teaming, in which information is shared across knowledge teams in order to solve complex problems and to innovate. Team members' knowledge attributes influence their interactions and emergent states, which in turn influence member learning and actual team innovation. Overlaying this input-process-output model are contextual factors, including the environment, task, time, and leadership. A key lesson from this article is that knowledge boundaries range from thin to thick given that they can be syntactic, semantic, and/or pragmatic. Team members' awareness of these boundaries and their recognition of diversity in these attributes can be taken for granted (Edmondson & Reynolds, 2016), yet managing these issues actively is critical for cross-boundary teaming outcomes (Ancona & Bresman, 2007).

Shuffler, Kramer, Carter, and Rosen advance a perspective for diagnosing multi-team functioning that focuses on the individual component teams. They leverage a team-centric approach by identifying profiles that indicate "types of teams" (cf. O'Neill, McLarnon, Hoffart, Woodley, & Allen, *in press*). They propose that these types of teams can vary based on profiles comprising team affect, behaviors, cognition, and motivation. Knowledge of component team profiles can support targeted and customized interventions that may provide the greatest payoffs for a particular team's development. Access to this diagnostic information could also signal to leaders the structural supports that might be most needed by team members.

3.2. Build effective team processes and states

Team processes and team states are the internal engines that can propel or hinder forward progress. O'Neill and McLarnon review the literature on team conflict states and offer an integrative model of team conflict's effects over time. They suggest that teams exhibit four profiles of team conflict states, and that these conflict states affect conflict management processes within the team's conflict system. They posit that the foundation of effective conflict is Edmondson's (1999) concept of psychological safety, which is that the team environment is safe for interpersonal risk taking. Finally, team design and environmental factors shape the conflict context.

Grossman and Feitosa develop a dynamic theoretical model of team trust in action teams. They refer to action teams as "teams in extreme, stressful, and unpredictable situations" that involve life and death consequences (see also Vashdi, Bamberger, & Erez, 2013). Team trust and performance are expected to demonstrate a positive, reciprocal relationship, although moderators include interdependence, interventions, and trust violations. A multiphasic perspective (Marks, Mathieu, & Zaccaro, 2001) is offered to understand how trust affects action processes, and how subsequent performance affects maintenance states and later trust levels. If trust is damaged, the authors suggest that transition processes must be invoked to get the team back on track.

3.3. Manage team development issues

Effective team development is essential to supporting teams in the pursuit of achieving their full potential (Hackman, 2002). Three papers addressed the issue of team development. First, Frick, Fletcher, Ramsay, and Bedwell offer a new model of team adaptation involving "the four Rs", which are recognize, reframe, respond, and reflect. These phases of team adaptation are posited to occur sequentially. Teams are expected to do better if they spend more time in the first phase relative to the other phases, and the authors emphasize that overlooking the reflect phase will interfere with learning. Importantly, a novel perspective forwarded is the focus on maladaptation, given that teams may adapt poorly and the reasons why are not well understood (Maynard, Kennedy, Sommer, & Passos, 2015).

Bush, LePine, and Newton explore the role of team task transitions and how these transitions impact later team functioning. They place emphasis on punctuated and brief team task transitions and the extent to which the tasks from one action phase to the next are similar. Punctuated task transitions, according to the authors, require transition awareness, disengagement from the previous tasks, and reorientation toward the next task. Only when teams have more time are the transitions by Marks et al. (2001), involving mission analysis, strategy formulation and planning, and goal specification, expected to be employed. However, punctuated task transitions will only be effective when tasks are similar. For dissimilar tasks, the transition processes specified by Marks et al. (2001) will be more important. Bush et al. elaborate on how team task transitions are influenced by group affective tone, shared cognitive absorption, adaptability, temporal issues, and team development models.

Driskell, Driskell, and Salas report on the mechanisms involved in linking extremely demanding teamwork conditions with stress-related behaviors exhibited by team members. Extreme environments involve contexts with significant task, social, or environmental demands coupled with highly consequential outcomes of poor team performance. Stress is inherent in such environments and needs to be understood and mitigated (Driskell, Salas, & Johnston, 2006). Team processes and emergent states are expected to be influenced by stress induced distraction, cognitive load, negative emotion, anxiety, and social impairment. Fortunately, the authors describe several interventions that can help teams address the challenges of extreme environments, such as team composition, training, and

job design.

3.4. Leverage human capital

Human capital in the context of teams involves a combination of knowledge, skills, abilities, and other characteristics that members and leaders possess (Ployhart, Nyberg, Reily, & Maltrarich, 2014). Bell, Brown, and Weiss advocate for a strategic application of human capital in teams that creates a business advantage through unique value creation. Bell et al. suggest that composing teams should be done through emphasizing alignment with the organization's goals (vertical congruence) as well as the other relevant teams in the organization (horizontal congruence). Importantly, in order for the organization to adapt to its environment, team composition decisions should take into account team and individual flexibility so that reconfigurations can be done swiftly and effectively.

Scott, Jiang, Wildman, and Griffith provide an integration of implicit leadership and followership theories with a social network perspective to understand leadership emergence and the associated team outcomes. They point out that the traditional approach to leadership as a formal, hierarchically-driven position is becoming outdated as organizations seek to leverage the full potential and expertise of all their human capital. Within Scott et al.'s implicit leadership network theory (ILNT), they propose a 2×2 typology of ILNT based on the level of expected influence (influential versus receptive) and the level of activity (active versus passive). This interacts with team members' perceptions of the team's overall leadership network to help understand the structure of leadership that emerges in a particular situation. As an example, if leadership is relatively shared and members are mostly influential (versus receptive) and active (versus passive), then increased team conflict and negative affective states pose a potential threat.

4. Conceptual issues in teams research

4.1. Moving forward

The articles, as a collective, identify several pressing over-arching issues that need to be addressed in future teams research. We refer to these as "realities" that we believe teams researchers need to confront. We offer this as an agenda for future research on high performance work teams.

4.2. Reality that teams are embedded in multi-team systems

Addressing the reality of multi-team systems is important because they will most likely gain in prevalence (Shuffler, Rico, & Salas, 2014). Multi-team systems are likely when the work is interdisciplinary, complex, too large for a single team, outputs are needed relatively quickly, and team membership in component teams is fluid. Cross-boundary teaming, involving working jointly across various boundaries to deliver high performance on an unfamiliar project (Edmondson & Harvey), creates a host of challenges involving a lack of a common language, system of interpretation, and interest/agenda (i.e., syntactic, semantic, and pragmatic). Goal hierarchies can be structured such that teams do not see clearly how their own goals relate to the goals of the entire system, thereby affecting motivation (Rico, Hinsz, Burke, & Salas, 2017).

We know from theories, such as sociotechnical systems theory, that the system in which a particular team exists affects its capacity to perform well. However, although most teams are embedded within a larger system of teams, we do not currently have a bedrock of strong theories, empirical findings, or validated interventions to inform organizations about how to successfully navigate multi-team systems (but see, for example, DeChurch & Marks, 2006). Rico et al. offer recommendations for this by articulating how to manage countervailing and confluent forces within a system to achieve dynamic equilibrium. Shuffler et al. offer intra-team profiles of teamwork variables as a solution to understanding the variability across component teams and its implications for system effectiveness and the use of targeted interventions. Edmondson and Harvey describe the role of the environment, tasks, time, and leadership in cross-boundary teaming. Bell et al. link team composition decisions to the larger picture of team membership management, which involves considering multiple team memberships and networks of teams. However, the reality that team membership is often fluid, that teams are often embedded within a matrix organizational design, and that teams depend on each other for success, is one that we cannot afford to ignore and that we need to learn more about through advancement of testable theories and empirical research. Notably several research groups are working on this but, as Shuffler et al. noted, data collection involving multi-team systems is a significant challenge.

4.3. Reality of social networks within and outside the team

Social networks give us a nuanced understanding of the social fabric binding team members to each other and to individuals outside the team. Trust, conflict, information sharing, leadership, and other constructs are often studied at the team or the individual level, with little consideration to the pattern of linkages among team members (cf. Jones & Shah, 2016). Similarly, in the boundary spanning literature scouting and exportation activities involving member networks are understood as crucial to the team's success (Ancona & Bresman, 2007), and high-performing organizations have strong network ties across teams (Nelson, 1989). It is well recognized that investigating patterns of social networks could greatly enrich our understanding of high performance teamwork.

Scott et al. propose that implicit leadership networks can help understand the effectiveness of leadership in teams. Often a challenge with social networks is identifying a meaningful taxonomy of social structures. Scott et al. identify a taxonomy of five

structures, which provide a holistic view of how leadership may be enacted in the team and the implications for team member behavior and team effectiveness. Edmondson and Harvey deal with cross-boundary teaming that will naturally lead to the development of network linkages important to the system's entire functioning. Bell et al. emphasize that social networks could play a role in understanding an individual's fit for membership in a particular team. Future research can and should go deeper, like these articles do, by introducing and examining social networks in many teamwork concepts as well as considering how networks affect the performance of entire systems (e.g., multi-team). Moreover, how multiplex relationships (e.g., Hood, Cruz, & Bachrach, 2017) that involve multiple constructs simultaneously, such as task and relationship conflict, exist in networks and, in turn, overall team functioning also appear to be a direction for future research.

4.4. Reality that constructs occur as a system rather than in isolation

In the mainstream organizational literature a profile-centered perspective has emerged (e.g., Meyer, Stanley, & Vandenberg, 2013). This concept suggests that constructs tend to co-occur within entities in certain patterns. For example, Morin, Marizot, Boudrias, and Madore (2011) identified a profile of organizational commitment called "workplace commitment", given that these employees were committed to all facets of their work *except* their supervisor. This person-centered concept has been advanced to the team-level to suggest that constructs tend to co-occur in certain patterns in teams (O'Neill et al., *in press*). This is particularly helpful to understand patterns of constructs as they occur or do not occur together that are theorized to have interdependence, such as team conflict types (i.e., task conflict, relationship conflict, and process conflict). We can therefore categorize (with a degree of accuracy) teams into certain classes, which can be useful for understanding antecedents and outcomes, as well as for diagnostic purposes.

There are a number of areas where team-level profiles could be further examined. O'Neill and McLarnon's article reports on task, relationship, and process conflict. Shuffler et al.'s article reports on affect, behavior, cognition, and motivation. Another potential application could be to identify teams with types of communication media requirements. Indeed, virtual teams use media with multiple facets such as immediacy of feedback, symbol variety, parallelism, rehearsal, and reprocessability (Maruping & Agarwal, 2004). Virtual teams could exhibit different patterns in their need for using such facets given their work context and coordination demands. Examining these and other team profiles through a team-centric lens is an avenue that offers a holistic perspective that should be treated seriously in future research. Antecedents, outcomes, and additional variables that could explain changes in profiles over time could add rich theoretical understanding to knowledge of high performance work teams.

4.5. Reality that teamwork is dynamic—emerges over time

Although considerable knowledge has accumulated on high performance teamwork (e.g., Salas et al., 2015), much of this knowledge is based on an implicit premise that teamwork variables are static rather than dynamic (Kozlowski, 2015). However, there is strong consensus in the field that teamwork is dynamic and that studies investigating time-related issues are sorely needed for a deeper understanding of team effectiveness.

Most contributors to the current special issue incorporate some element involving the implications of time in their teamwork models (cf. Arrow, Poole, Henry, Wheelan, & Moreland, 2004). Interestingly, the manner in which time and dynamics are involved is varied, and we can learn about several distinct areas in which future research in teamwork needs to move in order to be realistic about team dynamics. Grossman and Feitosa examine the reciprocal effects of trust and trust violations and the implications for team processes and states. Bush et al. present a different perspective that involves team transition processes that are punctuated and very short in nature, which they argue are fundamentally different than are transition processes occurring across longer time spans (i.e., Marks et al., 2001). Indeed, Driskell et al. deal with teams in extreme environments in which time pressure can be a significant factor in determining team performance. These examples provide a glimpse of the many different structures in which time can be considered in teams. What is clear is that our field needs to gain substantial maturity in conceptualizing, theorizing, and modeling various time-related influences on team effectiveness.

4.6. Reality that psychological safety matters for teamwork

Psychological safety is the "shared belief that the team is safe for interpersonal risk taking" (Edmondson, 1999, p. 354). Psychological safety has emerged as a prominent teamwork variable influencing high performance teamwork. For example, in a detailed exposition by Duhigg (2016) of a study conducted by Google led by Julia Roznabsky involving 180 Google teams (known as "Project Aristotle"), the results indicated that the common factor binding team members together and generating high performance was psychological safety. O'Neill and McLarnon view psychological safety as the critical antecedent to cooperative conflict management and healthy team conflict profiles (i.e., relatively high task conflict, relatively low relationship and process conflict). Edmondson and Harvey consider psychological safety as an important contextual feature enabling or constraining cross-boundary teaming in organizations. Psychological safety creates a platform for team members to share openly, exchange ideas and information, express disagreement and concerns, and take risks that could lead to learning and innovation. Psychological safety is a relatively nascent concept in the literature and we expect much more research on its emergence, maintenance, and implications for team functioning.

4.7. Reality that teams must be adaptive and self-adjusting social entities

To achieve higher performance most teams will face a constant need to adapt and adjust to their environments and the people

within the team (Baard, Rench, & Kozlowski, 2014). Team adaptability is “the capacity of a team to make needed changes in response to a disruption or trigger” (Maynard, Kennedy, & Sommer, 2015). Team adaptability involves multiple levels as emergent team variables as well as individual-level variables, and the social networks in between, are implicated in adaptive team performance (Burke, Stagl, Salas, Pierce, & Kendall, 2006). The complexity of, and clear need for, team adaptability raises important issues for team effectiveness scholars and practitioners.

The Frick et al. article helps simplify the team adaptation and adjustment process by organizing it into “the four R’s:” Recognize, Reframe, Respond, and Reflect. But a key insight is that the authors noted that team adaptation has been positively related to team performance in every article published and reviewed by Maynard, Kennedy, and Sommer (2015); McChrystal, Collins, Silverman, and Fussell, 2015 and we have not spent nearly as much effort considering “derailers” to team adaptation. Treating this as maladaptation, or a failure to self-adjust effectively, raises a number of related areas in which breakdowns in team functioning could lead to maladaptation, such as team cognition, information sharing, and strategy and contingency planning. Similarly, Bush et al. make it clear that transitions can be abrupt but necessary for rapidly adjusting to a changing environment. Research is needed to understand how teams use mini-transitions to adapt during action phases (i.e., when they are carrying out the task and need to make an adjustment), and more broadly how team adaptation can be derailed and how to avoid that.

Conclusion

The articles in the current special issue offer three avenues for moving forward the science and practice of high performance teamwork. First, the articles provide targeted literature reviews that summarize current knowledge. This can help readers quickly understand the state of the science within a particular teamwork topic area. Second, the articles provide actionable research agendas that offer immediate next steps for empirical research. This empirical research can confirm, disconfirm, and offer modifications to the theories proposed. Third, each article provides implications, examples, and/or recommendations for practitioners. Thus, practitioners should be able to implement new approaches to building high performance teamwork in organizations based on recommendations and insights offered by the authors.

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