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Research and Applications

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THE FIVE PERILS OF TEAM PLANNING

Regularities and Remedies

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and Leslie A. DeChurch*

Many modern forms of organizing focus on small teams as the basic task unit (Cash, Earl, & Morison, 2008; Edmondson, 2012; Hackman, 2012). Structuring work around teams allows organizations to bring diverse knowledge sets to bear on complex problems (Gardner, Gino, & Staats, 2012). However, the wisdom of relying heavily on teams for important decisions rests on the assumption that teams are able to synthesize their members' diverse informational sets. This chapter explores the duality between how teams plan and how they should plan. We review the research on team planning, focusing on regularities and remedies. The regularities are five natural tendencies of teams that limit their planning capabilities. The remedies are evidence-based strategies for mitigating these harmful tendencies in order to optimize team-based planning.

The plans made in teams are often highly consequential. For example, when a patient is diagnosed with cancer, health-care teams composed of general physicians, specialists, and nurses jointly develop detailed treatment plans. These teams have the challenge of generating plans that are specific to each specialty; every patient presents different conditions and requires a customized treatment plan that optimizes both the patient's quality of life and the destruction of the cancer – often competing goals. In large corporations, corporate governance is typically enacted collectively by a multi-member group (e.g. strategic planning CEO teams; Hambrick & Mason, 1984) rather than through a strict hierarchy (Bainbridge, 2002). The quality of plans developed by these types of teams can have repercussions throughout organizations. Importantly, team planning is not limited to the discussion that occurs prior to action. Consider, for example, the teams involved in the seventh manned mission in the American Apollo space program – Apollo 13. Despite a terrible disaster in which an oxygen tank exploded leaving the crew on Apollo 13 lacking sufficient water and carbon dioxide and without a clear plan for return to safety, the crew landed safely on Earth on April 17, 1970. With the stakes that high, failure to plan effectively was certainly not an option. Not only did the crew and ground control develop plans prior to launch, when disaster struck, they were able to quickly identify the problem, integrate their expertise, and creatively generate new reactive plans to bring the crew back to safety (Dumoulin, 2001).

Certainly, not all team planning occurs under life-or-death circumstances. In fact, for all teams – from those directing the strategy of entire organizations to those operating at lower organizational levels – planning is often an essential element of success (Weingart, 1992; Stout, Cannon-Bowers,

Salas, & Milanovich, 1999; Patrick, James, & Ahmed, 2006). Yet there are substantial challenges involved in collaboration, many of which are likely to surface when teams make group decisions. Unfortunately, groups often choose the wrong path due to breakdowns in teamwork and biases in decision making (Janis, 1971; Smith, Tindale, & Steiner, 1998). A long history of group research exposes the potential pitfalls of decision making in groups (Brodbeck, Kerschreiter, Mojzisch, Frey, & Schulz-Hardt, 2002; Hill, 1982; Hinsz, 1990; Asch, 1951; Janis, 1971). Thus, it is important for teams and their leaders to be aware of the potential biases teams face during planning so these pitfalls might be avoided.

The current chapter provides a framework for understanding typical pitfalls in team planning and how these might be mitigated. We begin by providing an overview of team planning processes. Team planning is divisible into three broad categories, each of which is vital to team success: (a) deliberate planning, (b) contingency planning, and (c) reactive strategy adjustment (Marks, Mathieu, & Zaccaro, 2001). The quality of these planning processes can be severely affected by group decision-making/planning biases or tendencies. We elaborate on five of these biases, each of which has the potential to greatly reduce a team's ability to plan effectively: (1) a tendency to discuss shared information, (2) a tendency to view the planning process in light of pre-discussion preferences, (3) a tendency toward uneven participation, (4) a tendency for group decisions to escalate, and (5) a tendency to ignore the planning process altogether. We discuss these biases in light of prior research on teams and offer specific remedies for how teams might overcome these regularities to reap the benefits of team-based planning.

Team Planning

Decades of research suggest that team success is due, in large part, to the quality of the *processes* (i.e. behavioral interactions) that occur among team members. This notion is central to models of team performance, which argue that team processes are a key mechanism through which inputs (e.g. team member knowledge and skills, available resources, organizational climate) are translated into important outcomes (e.g. team performance; Gist, Locke, & Taylor, 1987; Hackman, 1983; Guzzo & Shea, 1992; Ilgen, Hollenbeck, Johnson, & Jundt, 2005). In particular, *planning* is especially vital to team success (Marks et al., 2001; Stout et al., 1999).

In a broad sense, planning is the process of determining a course of action in order to reach a desired goal (Sitzmann & Johnson, 2012; Rousseau & Aubé, 2010; Weingart, 1992; Weldon, Jehn, & Pradhan, 1991). This process involves specifying several aspects of future actions. For example, planning may include specification of tasks that are relevant and necessary for goal achievement, the best course of action for executing critical tasks, and the resources needed to accomplish these tasks. Planning may also involve specification of how progress toward the goal will be monitored, and how surprises and distractions will be handled along the way (Rousseau & Aubé, 2010; Claessens, van Eerde, Rutte, & Roe, 2004; Weingart, 1992; Weldon et al., 1991).

In teams, planning is a dynamic process through which teams develop goals, share information related to task requirements, and clarify members' roles and responsibilities (Stout et al., 1999). Specifically, high-quality team planning is characterized by:

- (1) a future orientation, (2) extensive interaction between [team] members, (3) a systematic and comprehensive analysis of the [or team's] strengths, weakness, opportunities, and threats, (4) a clear definition of the roles and functions of all members and departments, and finally, (5) the development and communication of action plans and the allocation of resources to action plans.

(Smith, Locke, & Barry, 1990, p. 124)

The quality of team planning plays an important role in setting a team's ability to meet future objectives (Mehta, Feild, Armenakis, & Mehta, 2009). For example, Smith and colleagues (1990) demonstrated that whereas the amount of time teams spent planning was associated with high team performance when the quality of planning was high, this relationship was reversed when planning quality was low, with more time spent planning yielding lower team performance.

High-quality planning is also important for team performance because it can enhance other critical teamwork processes. For example, creating shared task knowledge and common workflow expectations among team members through high-quality planning helps teams handle what may not or could not have been expected when originally developing their plans (Bechky & Okhuysen, 2011). Stout and colleagues (1999) showed that teams who engaged in high-quality planning were able to form accurate cognitions about the team task and other members. In turn, these teams were better able to provide information in advance of explicit requests, which facilitated subsequent group performance (Stout et al., 1999). In sum, research has demonstrated repeatedly that high-quality team planning is important for future success, underscoring the need for a clear understanding of the team planning process.

Team Planning Processes

The process of team planning can be understood through a temporal model of team performance developed by Marks and her colleagues in 2001. Marks et al. (2001) argue that as teams work to achieve their goals, they cycle repeatedly through two types of performance “phases” or “episodes,” both of which are defined by the nature of the fundamental interaction processes occurring among team members. Specifically, teams cycle through multiple *transition* and *action* phases throughout task performance. Whereas action phases are the periods of time when teams engage in actions directly related to goal accomplishment, transition phases refer to those times when teams evaluate or re-evaluate environmental contingencies and plan for subsequent actions. Because of the focus on evaluating current conditions and deciding on future actions during team transition phases, team planning is considered a hallmark transition phase process.

Figure 9.1 displays how the processes of planning fit into dominant models of team performance (Ilgen et al., 2005; Kozlowski & Ilgen, 2006). These models imply that inputs such as team composition, resources, training, or leadership impact outputs such as team performance or viability through various mechanisms or mediators. These mediators might be observable behavioral processes such as planning, or they might be emergent psychological properties of the team such as trust, cohesion, or shared cognition. Importantly, as indicated by the directional arrows in Figure 9.1, relationships among all of these variables are cyclical such that team inputs, mediators, and outputs can shape subsequent inputs, mediators, and outputs. For example, Stout et al. (1999) found effective planning processes increased shared mental models among team members (an emergent state), which resulted in the use of more efficient communication strategies and improved coordination processes during subsequent action phases. Patrick et al. (2006) showed that effective planning processes improve team members' team situational awareness, which enables effective team performance.

According to Marks and her colleagues (2001), *strategy formulation and planning processes* are those behaviors and interactions that involve development of possible courses of action for task accomplishment. These activities include decision making regarding the behaviors that team members should engage in to reach their objectives, the timing of actions, and member roles and responsibilities (Hackman & Oldham, 1980; Stout et al., 1999). Additionally, Marks and colleagues (2001) note that effective strategy development involves consideration and incorporation into

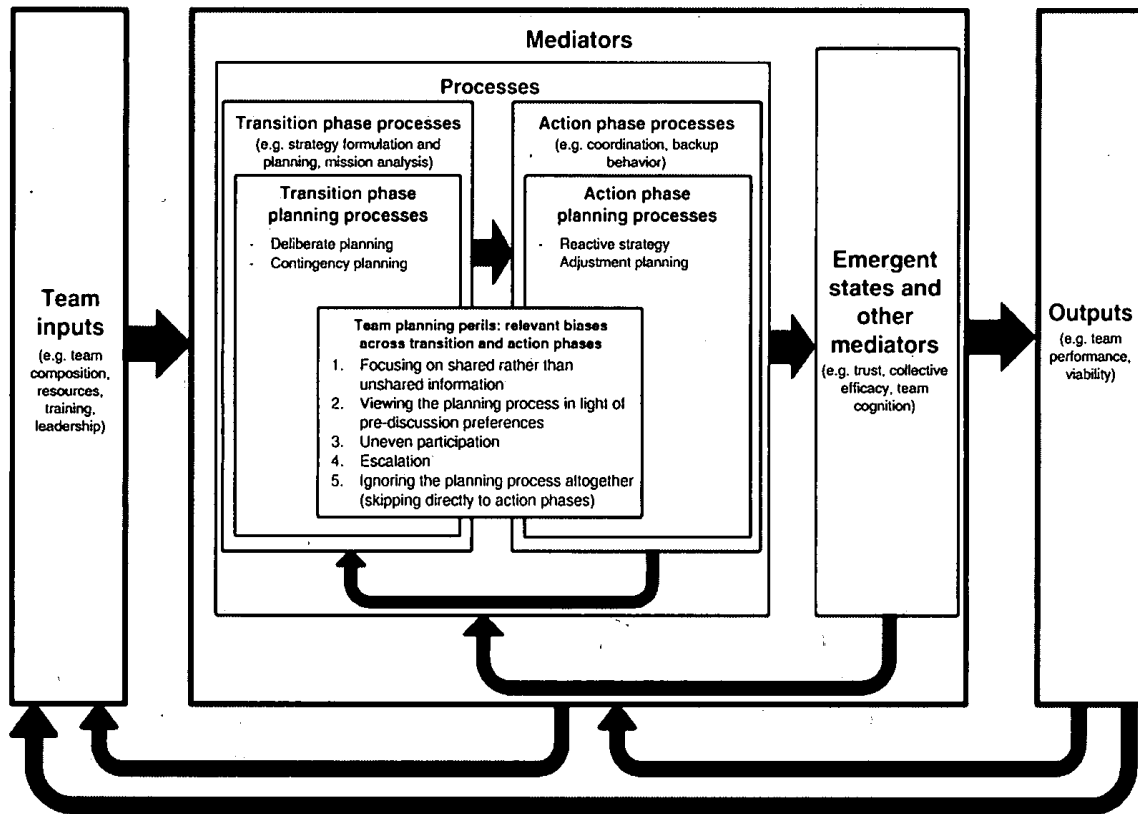


FIGURE 9.1 Planning processes and biases in dominant models of team effectiveness (Hackman, 1983; Ilgen et al., 2005; Kozlowski & Ilgen, 2006; McGrath, 1964)

plans of various environmental contingencies (e.g. time constraints, resources, team member abilities, potential changes).

Although team planning is central to team transition phases, scholars have noted that planning is critical both prior to working on a task as well as during task execution (e.g. Weingart, 1992). In alignment with this view, Marks et al. (2001) further categorized the planning and strategy formulation process into three sub-dimensions: (a) deliberate planning; (b) contingency planning; and (c) reactive strategy adjustment. Deliberate planning and contingency planning constitute what many might consider to be the primary focus of the team planning process and are the primary focus of initial transition phases. *Deliberate planning* refers to the specification of a principal course of action for task completion. *Contingency planning* refers to development of alternative plans and strategy adjustments to prepare for anticipated environmental changes. On the other hand, as shown in Figure 9.1, the third type of planning/strategic activity, *reactive strategy adjustment*, refers to plans developed *during* action phases. These are strategy or plan adjustments that occur throughout team performance cycles in response to unanticipated environmental changes.

Each of the three categories of team planning processes is important for team success. By clearly specifying how teams will interact and accomplish tasks, deliberate planning enables more effective processes (e.g. coordination, backup behavior) during subsequent action phases (Janicik & Bartel, 2003; Mathieu & Schulze, 2006). Similarly, developing backup (i.e. contingency) plans that delineate alternative teamwork and taskwork strategies that can be enacted should primary plans fail should enable more streamlined and coordinated actions in subsequent performance phases (DeChurch & Haas, 2008). Especially in early stages of team performance, generating explicit plans for how members will interact with one another (i.e. teamwork) and how they will accomplish goals (i.e.

taskwork) is predictive of team performance (Mathieu & Rapp, 2009). Yet even the best-laid plans (and backup plans) sometimes fail, especially in the face of unanticipated events. Thus, teams must have the capacity to adapt and generate new plans *during* action phases. In support of this notion, research shows that reactive planning is relatively more predictive of team performance compared to advance planning (DeChurch & Haas, 2008; Gevers, van Eerde, & Rutte, 2001; Weingart, 1992). Those teams who are able to make reactive and non-scripted adjustments during their task are more likely to overcome obstacles and succeed (Kozlowski & Ilgen, 2006; LePine, 2003). Moreover, although, the majority of research on team planning focuses on deliberate or contingency planning, each of the three types of planning process is largely non-overlapping, and reactive strategy adjustment planning is the best predictor of team coordination overall (DeChurch & Haas, 2008).

In sum, there are many reasons to encourage planning in teams. Teams have the potential to bring diverse informational sets to bear on complex organizational problems (Kerr & Tindale, 2004). Effective team planning processes throughout transition and action phases are predictive of important outcomes (e.g. team performance; Stout et al., 1999), and a long history of research suggests that teams have the potential to make better decisions as compared to most individuals (Bainbridge, 2002; Blinder & Morgan, 2000; Laughlin, Zander, Knievel, & Tan, 2003; Shaw, 1936).

Group and team performance research suggests, however, that process *losses* as well as *gains* are possible in teams (Kerr & Tindale, 2004; Steiner, 1972). In particular, teams tend to suffer from several group decision-making *biases* that can yield suboptimal decisions (see Figure 9.1). Team decision-making biases describe “team decision-making behaviour that deviates from what (existing) normative decision-making models imply” (Jones & Roelofsma, 2000, pp. 1132). Because decision making is embedded in team tasks – especially during team planning – certain team decision-making biases can negate the potential benefits of team-based planning throughout transition and action phases. Thus, we focus the remainder of this chapter on the team decision-making biases that might surface during deliberate, contingency, and reactive strategy adjustment planning.

Team Planning Perils: Five Biases that Hinder Team Planning and How to Remedy Them

Here we highlight several team biases that, if ignored, might greatly reduce a team’s ability to effectively plan for future action: (1) a tendency to discuss shared as opposed to unshared information, (2) a tendency to view the planning process in light of pre-discussion preferences, (3) a tendency to engage in uneven participation, (4) a tendency toward escalation, and (5) a tendency to ignore the planning process altogether (see Figure 9.1). The following sections elaborate these five biases, discussing the conditions under which these biases are most likely, the possible detriments to team performance if they are ignored, and potential remedies to help overcome these regularities (see Table 9.1).

Bias 1: Ignoring Unshared Information

Knowledge is distributed in teams such that some information is shared (known to all or most members) and some is unique to one or a few members (Mojzisch, Grouneva, & Schulz-Hardt, 2010; Mesmer-Magnus & DeChurch, 2009). The underlying assumption of assigning planning or decision-making tasks to teams is that the members will be able to integrate their unique (unshared) information such that they collectively generate more superior decisions than any single member could have made individually. However, even when teams have all of the information needed to make an optimal decision, they do not always succeed in integrating their knowledge. This is, in part, because teams tend to spend the majority of their planning time reviewing shared, rather than

TABLE 9.1 Five common team planning perils and associated remedies

<i>Team planning perils</i>	<i>Description</i>	<i>Potential solutions</i>
1. Common information	Teams tend to discuss shared as opposed to unique information	<ul style="list-style-type: none"> • Structure team discussions • Frame tasks as intellectual, problem-solving • Promote a cooperative climate • Train teams on common barriers to effective group decision making and strategies to combat these barriers • Define members' roles • Use task-oriented, goal-focused, and depersonalized communication technology
2. Pre-discussion preferences	Teams tend to focus on and argue for pre-discussion preferences	<ul style="list-style-type: none"> • Compose teams of members high in psychological collectivism and cognitive ability • Designate a time for discussing alternative plans • Promote diversity – include members with conflicting pre-discussion preferences • Develop accurate team cognition about the task at hand (e.g. employ direct leader-to-member communication about the embedding environment)
3. Uneven participation	Discussion participation is often unevenly distributed among team members, particularly in larger groups	<ul style="list-style-type: none"> • Limit group size for decision making • Use virtual communication platforms that enable asynchronous contributions to group discussion • Limit participation of more vocal members during discussions • Increase group cohesion • Ensure punishment for poor individual contributions for group performance • Increase members' interest in the task • Increase task interdependence • Increase individual identifiability

TABLE 9.1 (cont.)

<i>Team planning perils</i>	<i>Description</i>	<i>Potential solutions</i>
4. Escalation	Excessive team cohesiveness can lead to blind faith and escalation of team decisions	<ul style="list-style-type: none"> • Ensure team diversity • Train self-monitoring practices • Monitor team progress • Assign a devil's advocate • Break up into sub-groups • Allow anonymous opinion sharing • Require discussion of alternative plans • Establish a safe climate
5. Planning aversion	Teams tend to skip planning altogether	<ul style="list-style-type: none"> • Designate time for planning • Train team on importance of planning • Use tangible tools to plan such as a team charter or outline • Utilize low-workload periods to plan • Encourage team cohesion

unique, information (Mojzisch et al., 2010; Mesmer-Magnus & DeChurch, 2009; Greitemeyer & Schulz-Hardt, 2003). In other words, teams tend not to focus their time and energy understanding and integrating the information that only a few members hold – information that may be crucial for making the best decision. This bias can affect planning processes during the transition phase: teams need access to sufficient informational resources in order to generate deliberate and contingency plans. However, this bias might be particularly detrimental to reactive strategy adjustment planning during action phases when teams must quickly share newly acquired information in order to accurately revamp existing plans in the face of changing circumstances.

Several explanations have been offered for the shared information bias. First, the tendency to focus overly on shared information can be a consequence of the unequal distribution of shared vs. unshared information among members. Quite simply, as a team, shared information is more likely to be brought up in discussion because more members are able to possess it and remember it (Stasser & Stewart, 1992; Stasser, Taylor, & Hanna, 1989; Stasser & Titus, 1985). Second, certain social psychological processes, such as mutual enhancement (Wittenbaum, Hubbell, & Zukerman, 1999) or social validation, with members mutually accepting and validating shared information (Parks & Cowlin, 1996), are thought to underlie this tendency.

Unfortunately, the lack of discussion of unique information, and/or the dismissal of unique information as unimportant decreases a team's ability to develop and evaluate potential plans (Bonito, DeCamp, Coffman, & Fleming, 2006). Because shared information tends to be discussed by the group and repeated more often than unshared information (Greitemeyer & Schulz-Hardt, 2003), group members may wrongfully trust shared information to a greater extent than unique information. Through a social validation process, with members validating the correctness and adequacy of shared information, members begin to assign more weight and importance to shared information, viewing it as more accurate and reliable than unshared information and potentially undermining the quality of the group's plans (Boos, Schauenburg, Strack, & Belz, 2013; Mojzisch et al., 2010). The tendency to focus on shared information can also create a "law of small numbers bias" in decision making (Tversky & Kahneman, 1974). The law of small numbers bias occurs when an individual makes a decision based on a relatively small sample of information that he or she assumes is representative of the whole population of information (Tversky & Kahneman, 1974). In teams, members become more susceptible to the law of small numbers bias when the team focuses processing resources only on the information that is commonly held by the majority of members (Houghton, Simon, Aquino, & Goldberg, 2000).

Teams are most likely to share information "when (a) all members already know the information (biased information sampling), (b) members are capable of making accurate decisions independently (informational independence), and (c) members are highly similar to one another (member similarity)" (Mesmer-Magnus & DeChurch, 2009, p. 543). The dilemma for team planning is that these conditions typify teams whose members may not need to share unique information – because they already possess all of the information, are able to make the decision independently, and/or are so similar to one another that the amount of unique information among members is low. Meanwhile, those teams with diverse members who must integrate diverse knowledge sets in order to generate team decisions are less likely to share information, hindering their ability to plan effectively.

Potential Remedies

Several potential remedies are available to encourage unique information sharing. A recent meta-analysis identifies three conditions that mitigate the common information effect in teams,

and that are important enablers of effective team planning: problem framing, structured discussions, and cooperative climate. All three are leverage points for team planning.

The first leverage point for team planning is to frame the planning situation as a problem to be solved rather than a judgment. Teams who frame their planning as a problem will share more unique information than will teams who view their task as one of making a judgment (Mesmer-Magnus & DeChurch, 2009). A judgment frame seems to prime individuals to hold tightly to their individual preferences and forgo an open exchange of information. To plan effectively, teams need to process information as a team, and not as an additive combination of individuals. The problem-solving frame is one key way to accomplish this.

The second leverage point for team information sharing is to use a structured discussion process. Teams who design a process of fact-finding, and who separate the “discovery of information” from the “evaluation of information” are more likely to discuss unique information than are teams who engage in unstructured discussions. This process suggestion is similar to one made in the creativity literature where teams are urged to separate the generation of ideas from the evaluation of ideas. The same advice, using a structured and segmented discussion process, benefits team planning.

The third leverage point is the cooperative tone of the team. Teams whose members have cooperative relationships with one another are more willing to share unique information than are teams with competitive relations. Team leaders play an important role in setting a positive and supportive climate where divergent viewpoints are encouraged (Gebert, Boerner, & Kearney, 2010; Hunter & Cushenbery, 2011), and seemingly irrelevant information is valued by the team during the fact-finding phase of the discussion. In hidden profile tasks, unique information will seem contradictory to the team’s gut instinct, and so it is critical that teams set norms to value such information.

Three other interventions have received some support: team instruction, technology, and composition. Research provides some evidence that instructing teams on effective information-sharing procedures increases unique information sharing (Larson, Foster-Fishman, & Keys, 1994). Larson and his colleagues (1994) found that training teams on common barriers to effective group decision making (e.g. ignoring important information) as well as strategies that can be used to avoid these barriers (e.g. discussing with one another their doubts about proposed decisions, structuring group decisions) increased the amount of both shared and unshared information these teams discussed. A similar intervention is to make each member’s specific role explicit. Clarifying members’ roles can help draw the team’s attention to the fact that only certain members have access to certain information (Stout et al., 1999). It may not always be possible to compose teams whose members have worked together previously or are high in psychological collectivism. In fact, many planning/decision-making tasks are specifically assigned to cross-functional teams, those whose members have different areas of expertise. However, teams or leaders of teams may see an improvement in decision making when strategies to improve familiarity are employed. Thus, teams may benefit from cross-training that enables better awareness of members’ expertise (e.g. transactive memory systems; Lewis, 2003).

Boos and colleagues (2013) suggest a second intervention, utilizing task-oriented, goal-focused, and depersonalized information-technology-mediated communication settings to help teams overcome the shared information bias during planning and decision making. These scholars argue that relying on computer-mediated communication tools reduces members’ need for social validation, thus limiting the tendency to downplay unshared information.

Lastly, there is some evidence that teams can be staffed to plan well. Team composition can also play a role in the degree to which shared vs. unshared information is discussed. For example, Randall and colleagues (2011) found that teams higher in psychological collectivism and cognitive ability tend to share information more readily, leading to better reactive planning in the

face of disruptions. Other work suggests that teams are better able to integrate unshared knowledge when members have prior experience with one another (Gruenfeld, Mannix, Williams, & Neale, 1996).

Bias 2: Pre-Discussion Preferences

When a team begins a new task, each member starts by assessing their own knowledge base in order to come up with plans and possible courses of action to accomplish the task. Thus, members enter into team discussions with their own beliefs about how the task should be completed, expecting to complete the task in accordance with these individual beliefs (Hackman, Brousseau, & Weiss, 1976). Consequently, the group discussion becomes a place for members to exchange their pre-discussion preferences and negotiate the team's decisions based on those preferences (Greitemeyer & Schulz-Hardt, 2003).

Unfortunately, by entering the discussion focused on pre-discussion preferences, individuals are more likely to ignore new information and cues from their team members – cues that could lead to plans that are better suited to the unique situation. Instead, individuals typically tend to seek out and focus on pre-discussion preference-consistent information (i.e. “information that supports the group members’ initial preferences”; Mojzisch et al., 2010). Often, the most convincing individual's plan is chosen rather than the plan that is most logical, preventing the team from reaching its fullest potential. Again, this bias can impact planning across all phases of team performance (i.e. transition, action). However, it may be particularly relevant during early phases, when members’ initial plans are strongly influenced by pre-discussion experiences and preferences.

Scholars have offered pre-discussion preferences as an alternative explanation for the shared information bias (Bias 1 above). Gigone and Hastie (1993) argue that the pre-discussion distribution of information affects participants’ pre-discussion preferences, thus determining the positions they hold when entering into initial discussion. These authors found that the pattern of pre-discussion preferences was the driving force in subsequent group discussion – pre-discussion preferences mediated the relationship between information distribution and group decision making. Gigone and Hastie (1993) noted that members tended to exchange and combine their initial opinions, but paid little attention to new (e.g. conflicting) information.

Potential Remedies

Overcoming the pre-discussion preference bias can be an extremely difficult task for teams. Individuals are typically reluctant to alter their choices and beliefs, especially if they have resulted in positive outcomes in the past or if the individual feels committed to their initial choices (Greitemeyer & Schulz-Hardt, 2003).

To help prevent teams from focusing solely on pre-discussion preferences, it may be beneficial for the team to allocate a proportion of planning time for members to focus solely on discussing alternative strategies. Although discussing alternative strategies does not guarantee an effective strategy will be identified, requiring such a discussion increases the degree to which the group may identify and select a strategy that is more effective relative to those that seemed ‘obvious’ to team members initially (Hackman et al., 1976).

Another course of action that may help weaken or eliminate pre-discussion preferences is to encourage the team to exchange unique, unshared information by including members with conflicting pre-discussion preferences (Greitemeyer & Schulz-Hardt, 2003). In particular, research suggests that better team decisions are made (and more unshared information is discussed) when teams have at least a minority of members with different pre-discussion preferences as compared to

the majority (Brodbeck et al., 2002). Minorities can exert influence on groups by establishing and maintaining conflict (Moscovici, 1980). Whereas majorities encourage convergent thinking (i.e. alignment) and a focus toward the issue at hand, minority dissent can encourage divergent thinking (i.e. thinking about a problem in multiple ways), open-mindedness, and critical thinking (De Dreu & De Vries, 1996; Nemeth & Rogers, 1996; Nemeth & Kwan, 1987). Thus, providing opportunities for minority dissenters to give voice to their opinions can help counteract the pre-discussion bias by forcing a more in-depth discussion of alternative solutions and preventing the team from agreeing on a single course of action too quickly.

Finally, ensuring that members develop an accurate cognitive architecture regarding the task and the team can help mitigate the negative impact of members' pre-discussion preferences. When teams become more aware of the actual situation at stake (as opposed to the situations members have encountered in the past) they may be better able to develop plans that are aligned with the current task demands. With regard to reactive strategy adjustment planning, in particular, accurate team cognition (e.g. mental models; Cannon-Bowers & Salas, 1990; Cannon-Bowers, Salas, & Converse, 1993; Mohammed, Ferzandi, & Hamilton, 2010) plays a pivotal role in enabling team adaptive capacity (Burke, Stagl, Salas, Pierce, & Kendall, 2006). In fact, Burke et al. (2006) argue that team adaptation in the face of unexpected events is not possible when teams hold disparate interpretations of their environment. Here, leadership can be a critical leverage point. Leaders' communication to team members regarding the embedding environment helps facilitate the formation of more similar and accurate team mental models, which enables subsequent reactive strategy adjustment planning (Randall, Resick, & DeChurch, 2011).

Bias 3: Uneven Participation

Even participation in team decision making can help ensure available knowledge is accessed and utilized. A fairly even distribution of discussion participation may be likely in smaller groups, in part because individuals may feel more obligation to participate and confidence in their ability to contribute (Kooloos et al., 2011). However, as a team's size increases, the percentage of members participating in the group discussions shifts and uneven participation is more likely (Thomas & Fink, 1963). The tendency toward uneven participation can limit a team's ability to effectively plan by reducing the pool of knowledge made available to the team. Again, this bias might be observed throughout transition and action phases of team performance.

Uneven participation is likely in teams for several reasons. First, people vary in personal characteristics that make it more or less likely they will contribute to groups. For example, traits such as extraversion (Salgado, 1998; Judge, Bono, Ilies, & Gerhardt, 2002), narcissism (Brunell et al., 2008; Humphreys, Zhao, Ingram, Gladstone, & Basham, 2010), gender (Riggio, Riggio, Salinas, & Cole, 2003; Kent & Moss, 1994; Eagly & Karau, 1991), and cognitive ability (Smith & Foti, 1998; Zaccaro et al., 1997) have been shown to predict the likelihood that individuals will emerge as leaders or influential group members. In larger groups, these effects may be even more apparent. On the other hand, in smaller groups, even the quieter, more introverted individuals will see more opportunity and feel more pressure to participate.

Furthermore, a long history of research documents a tendency for individuals to show reduced motivation and contribution when in groups. Termed motivation losses (Steiner, 1972) or social loafing (Latané, Williams, & Harkins, 1979), this tendency to reduce effort in the presence of others is thought to be due to various factors, such as reduced risks of evaluation or more opportunities to free-ride. Moreover, as group size increases, although the total number of individuals who participate increases, the proportion of members who do so decreases.

Potential Remedies

The obvious solution in this case is to keep the group small. However, this is not always an option. Therefore, teams and leaders of teams must consider how best to encourage participation even when group size is large.

First, because group members' levels of participation within the team may be affected by personal characteristics (e.g. shyness, anxiety, status), it may be beneficial to utilize asynchronous (i.e. not immediate) virtual means of communicating rather than to have discussions face-to-face, especially when working in larger teams. For several reasons, when teams use virtual communication platforms such as message boards or chat rooms, there is a more equal participation as compared to face-to-face discussion (Böhlke, 2003). Virtual communication platforms can allow less-aggressive individuals to participate in team discussion. For highly diverse teams, relying on asynchronous tools such as email can serve to mitigate intercultural miscommunications and improve language accuracy (Shachaf, 2005). These platforms might encourage more thoughtful exchanges and extrapolations and reduce the natural dominance of others (Böhlke, 2003). Further, research suggests information technology positively impacts the number of alternative solutions generated during brainstorming, and improves subsequent performance on a brainstorming task (Valacich & Schwenk, 1995). Particularly for larger groups ($n > 9$), groups using computerized brainstorming tools tend to outperform nominal groups (Dennis & Valacich, 1993, 1994).

However, the use of virtual communication tools for planning activities should be approached with caution. For example, scholars have suggested that geographically distributed teams perform better when intense planning sessions are held face-to-face rather than across virtual communication tools (Maznevski & Chudoba, 2000). Other work shows a negative effect of information technology use on planning and coordination (e.g. Hollingshead, McGrath, & O'Connor, 1993), suggesting these tools may be inappropriate for planning that needs to occur "on the fly" (i.e. reactive strategy adjustment). Moreover, although virtual communication tools provide a greater opportunity for equal participation, this may not lead to information integration, because virtual communication platforms can reduce the exchange of social cues and implicit knowledge (Curşeu, 2006; Hollingshead, 1996).

Finally, to counteract the effects of social loafing, scholars have suggested increasing group cohesion (Worchel, Rothgerber, Day, Hart, & Butemeyer, 1998) and ensuring punishment for poor individual contributions to group performance (Miles & Greenberg, 1993). Other solutions include increasing members' interest and the importance placed on the task, team interdependence, and individual identifiability (Williams & Karau, 1991; Kerr & Stanfel, 1993; Kerr & Tindale, 2004).

Bias 4: Group Escalation

One of the most publicized biases in teams or groups is termed *groupthink* (Janis, 1971). Groupthink is a "mode of thinking that persons engage in when concurrence seeking becomes so dominant in a cohesive in-group that it tends to override realistic appraisal of alternative courses of action" (Janis, 1971, p. 9). According to Janis (1971), the "symptoms" of groupthink are: (1) an illusion of invulnerability, (2) a rationale to avoid negative feedback, (3) a belief of morality of the group, (4) the stereotyping of others not in the group, (5) pressure on dissenters, (6) self-censorship of doubts, (7) the illusion of unanimity, and (8) the mind-guarding of adverse information from the rest of the group. These conditions interact to increase the cohesiveness of the team members by inflating the sense of righteousness of the group and rejecting everything that would indicate otherwise, whether it is an outsider voicing an alternative opinion or an adverse thought.

The initial theory of groupthink argues that excessive team cohesiveness can lead teams to be too concerned with preserving that sense of cohesiveness and hesitant to criticize others' opinions and decisions, even when it would be in the team's best interest to do so. Thus, the groupthink symptoms are even more likely to appear in teams when there is closed leadership and an external threat, especially when the team is pressured on time (Choi & Kim, 1999). Groupthink is dangerous to the extent that individuals begin to believe in the validity of the group's decisions without examining the consequences of the decision or considering alternatives (Janis, 1971). In this way, as symptoms of groupthink surface, the team may have more difficulty planning effectively.

However, critics have argued that the groupthink theory is deficient in several respects. For example, the initial theory was developed to explain reasons behind examples of disastrous decisions made by highly cohesive teams (e.g. the Bay of Pigs fiasco in 1961). The theory neglects several important characteristics of groups that might affect decision processes, such as group norms (Postmes, Spears, & Cihangir, 2001), leader power (Fodor & Smith, 1982), task characteristics (Shanteau, 1992), or the amount of time or experience the group has had together (Gruenfeld et al., 1996). Further, empirical support is limited for the link between group cohesiveness and groupthink (Park, 1990), and the theory ignores the social processes of group polarization in group-decision making.

Group polarization refers to the tendency for an initial group opinion or position to become more intensified after group discussion (Lamm, 1988). For example, groups might become more risk seeking than the average group member was before group discussion (i.e. risky shift) or they might become more risk averse than the average group member was before discussion (i.e. cautious shift). The drivers of group polarization overlap with many of the so-called symptoms of groupthink. For instance, scholars have argued that group polarization can occur through a process of social comparison: members want to be perceived in a way that is favorable to the group but more so than the average group member, so they express opinions that are more extreme than the average but in the direction of the majority (Jones & Roelofsma, 2000). In groups high in cohesion, with members who believe in the superiority or morality of the group, the drive for positive social perceptions may be much stronger. However, both the groupthink and the group polarization literature support the notion that groups and teams tend to escalate (Bazerman, Giuliano, & Appelman, 1984; Jones & Roelofsma, 2000; Whyte, 1993), thus suggesting that teams and leaders of teams should not discount this work when attempting to improve team planning. Escalation might be especially likely when a team decision needs to be made quickly (i.e. reactive strategy adjustment), and it may severely limit the likelihood that teams will generate sufficient contingency plans because of the tendency to believe the team cannot fail.

Potential Remedies

One way to reduce the likelihood of team escalation is to ensure team member diversity (Harter, 2012). As mentioned above, team diversity can lead to teams composed of members with diverse pre-discussion preferences, leading to greater depth of discussion during team decision making. Alternatively, organizations can have teams take part in training to help recognize the symptoms of groupthink and to teach individuals how to self-monitor their progress by asking themselves questions such as "Are we still on target?" (Harter, 2012). Team leaders or organizations could potentially require team members to do this on a regular basis, perhaps by a paper or online survey or worksheet.

Another suggestion for preventing the negative implications of groupthink is to assign one member of the team to the dissenting "devil's advocate" role during planning to ensure the

discussion of the pros and cons of each decision and to promote the consideration of alternative plans (Schweiger, Sandberg, & Ragan, 1986). However, more recent work suggests that genuine dissent due to group heterogeneity in initial opinions is much more likely to elicit critical analysis of information as compared to the contrived dissent of a devil's advocate, underscoring the benefits of team diversity.

Depending on the size of the team, it may also be beneficial to break teams up into sub-groups, each of which develop plans individually, and then joins together to work out the differences (Janis, 1971). Another suggestion to help alleviate the social pressures of conformity is to allow members to state their opinions anonymously, perhaps by paper. Having each member's opinions written down before planning aloud could prevent any single individual (e.g. the team leader) from influencing the thoughts of the other team members before everyone has had a chance to consider their initial opinions. Further, prior to planning, team leaders might facilitate the voicing of dissenting opinions by requiring all members to submit at least one or two alternatives to the main plan, explaining the pros and cons of each (Kahneman, Lovallo, & Sibony, 2011). Moreover, teams and team leaders should strive to create a climate wherein disagreements regarding plans and decisions are viewed as "a productive part of the decision process (and resolved objectively) rather than as a sign of conflict between individuals (and suppressed)" (Kahneman et al., 2011, p. 55).

Bias 5: Planning Aversion

A final team planning bias is the tendency for teams not to plan at all but instead to enter directly into action phases. Regrettably, without planning, the team is more likely to be unprepared and unable to handle a situation if an unexpected event were to occur. Further, by dismissing an opportunity to plan, the team is more inclined to miss vital details about the task that should be considered and integrated into the team's course of action.

This tendency is likely to emerge under several circumstances. First, planning aversion may be particularly likely when demands on the team are high and separate planning sessions are not available (Weldon et al., 1991). Weingart (1992) argues that planning may not occur when teams are working toward difficult goals requiring quick results. Teams may be reinforced for ignoring planning in favor of action, because immediate actions can result in tangible outcomes that immediately affect performance (Weingart, 1992). Second, planning aversion may be more likely to occur if the resources needed to plan are the same as those needed to accomplish the task at hand. This is because in order to engage in planning, the team must slow or stop their current work in order to redistribute the limited resources (Weldon et al., 1991). Finally, the likelihood of planning and developing performance strategies may be inhibited when the team's task is familiar or well structured and members do not believe planning is necessary (Hackman et al., 1976).

An additional tendency related both to planning aversion and groupthink biases is what Buehler, Messervey, and Griffin (2005) term the "group accentuation" effect or the group optimism bias (p. 47). Research on individual decision making has repeatedly demonstrated an optimism bias in decision making. Individuals often predict that they will be able to accomplish their tasks sooner and more easily than they eventually do (Buehler, Griffin, & Ross, 2002; Flyvbjerg, Holme, & Soren, 2002; Hall, 1980). Interestingly, Buehler and colleagues showed that this bias is even more extreme when groups make decisions. To demonstrate loyalty to the project and team, members may tend to exaggerate optimistic views and suppress pessimism (Buehler et al., 2005; Kahneman & Lovallo, 1993). This is assumed to be due, in part, to the tendency for group members to focus even more selectively on task-relevant information when in groups, ignoring information that conflicts with the desired plan.

Potential Remedies

In order to help counteract the planning aversion bias, organizations or team leaders should allocate time periods solely for team planning. Past studies have found that teams did little planning if they were not provided with separate planning periods or if they were not specifically instructed to do so (Weingart, 1992). By having a specified time available for planning, teams are encouraged to engage in planning and do not feel pressured to act too soon. Training interventions (Larson et al., 1994) directed toward teaching teams about the importance of planning and the tendency for teams to ignore planning phases has been shown to improve this bias. When groups are persuaded to plan explicitly how a task should be accomplished, performance improvements are often observed (Hackman, Weiss, & Brousseau, 1974; Orasanu & Salas, 1993).

Team leaders and organizations can use formalized forms to encourage the group members to engage in planning. For example, teams could complete a team charter or some other form of structured strategy-development outline (Mathieu & Rapp, 2009). These tangible planning tools may help remind teams to focus at least a portion of their energy toward planning.

For teams that have high performance demands and, consequently, do not have much additional time to spend planning, an efficient solution is to utilize low-workload periods for making additional plans (Stout et al., 1999). This way, the team is not forced to stop working completely in order to plan, which may be especially important in crucial situations where the team cannot afford to lose additional work time.

Finally, encouraging a positive, cohesive climate and setting challenging goals are two other potential steps suggested in team literature that may mitigate the tendency to avoid planning. For example, Zaccaro, Gualtieri, and Minionis (1995) found teams with higher levels of task cohesiveness tend to spend more time planning and exchanging information during planning periods and more time exchanging task-relevant information during performance periods. Research suggests more challenging team goals can lead to higher performance through their impact on planning, tactics, and effort (e.g. Durham, Knight, & Locke, 1997; Weingart, 1992). Thus, it follows that team leaders may help encourage more team planning by setting more challenging goals for their teams.

Conclusion

In conclusion, teams offer the opportunity to seed organizational plans with diverse knowledge, expertise, and skills. Designing functional team planning processes is of ongoing importance – effective teams continually develop and redevelop plans throughout their life cycle. Yet the benefits of team plans are often offset by the biases teams experience when making group decisions. Thus, teams and leaders of teams must learn to take an active role in overcoming these biases and effectively shaping their own futures.

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