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Motivation in and of Work Teams: A Multilevel Perspective

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A major theme of this book is that contextual factors exact nontrivial influences on employee motivation. Contributing to this theme, the present chapter examines employee motivation in the context of work groups and teams. Following others (e.g., Kozlowski & Bell, 2003), we use the terms *work groups* and *work teams* interchangeably, and define them as “a distinguishable set of two or more people who interact, dynamically, interdependently, and adaptively toward a common and valued goal/objective/mission, who have each been assigned specific roles or functions to perform, and who have a limited life-span of membership” (Salas, Dickinson, Converse, & Tannenbaum, 1992, p. 4).

The popularity of teams in work organizations has steadily increased over the past several decades (Cohen & Bailey, 1997; Sundstrom, 1999). In particular, the vast majority of organizations are now using teams in response to rapid technological changes, increased reliance on customer-driven work projects, and the emerging global market, which combine to require more cooperation and collaboration among employees and within and between organizations (Ilgen & Pulakos, 1999). While there are many forms of teams in organizations (e.g., management, project, service, production; see Sundstrom, 1999), what is common to all work teams is that their members are highly interdependent in terms of (1) work-related inputs, (2) the processes they use to transform inputs to outcomes, and (3) performance feedback and rewards (Campion, Medsker, & Higgs, 1993). For instance, both project teams in the high-tech sector and military Special Forces teams include members with different functional expertise and interdependent roles, who must collaborate and work together to accomplish common goals (e.g., developing new products for customers and disabling an anti-aircraft artillery station, respectively).

As implied above, the nature of work in teams poses unique challenges to understanding work motivation. First, the interdependent nature of work in teams makes individual members especially susceptible to contextual influences of team processes. Such influences may include, for instance, the need to align goals among members and ensure the coordinated allocation of effort across members, as well as the potentially detrimental consequences of misaligned goals and effort allocation in teams. Given that teams, like individuals, are also goal driven, another important implication is that we need to understand how teams as collectives may differ in their motivation to accomplish goals. In that regard, we need to understand how motivational principles may generalize from the individual to the team level. Thus, studying motivation in the context of teams is important, as teams constitute a proximal social environment influencing individuals at work (Hackman, 1992). Accordingly, the overarching goal of this chapter is to energize and direct more research that explicitly integrates between the work teams and motivation literatures.

The study of groups and teams has emerged from classic social-psychological research on social influences in small groups. As reviewed by Hackman (1992), the small group literature has mounted ample evidence that groups can affect the motivation and functioning of their individual members. For instance, research on social loafing and free-riding suggests that individuals can sometimes exert less personal effort when working with others on collective tasks (Latané, Williams, & Harkins, 1979). In addition, there is often explicit pressure on group members to behave in a manner that is congruent with group norms (Feldman, 1984). Furthermore, work on group cohesion (Festinger, 1950; Gross & Martin, 1952) suggests that individuals are attracted to join groups and motivated to work on behalf of groups due to both task-related and social-related reasons. Although this basic small group research has provided evidence for social and interpersonal processes that affect individual motivation and behavior, it has been criticized as lacking external validity, given the bulk of this research has been conducted in contrived settings that rarely consider the complex nature of work in organizational settings (Cohen & Bailey, 1997; Gully, 2000; Ilgen, 1999; Ilgen, Major, Hollenbeck, & Sego, 1993; Kozlowski & Bell, 2003).

Over the past three decades, there has been a decline in more basic social psychological research on teams, in tandem with a sharp increase in more applied research on groups and teams that emphasizes predicting and explaining team effectiveness in work organizations (for reviews, see Ilgen et al., 2005; Kozlowski & Bell, 2003; Salas, Stagl, & Burke, 2004). More applied team research in industrial-organizational psychology and related fields has followed an input-process-outcome (IPO) framework (McGrath, 1964; Hackman, 1987), according to which team outcomes (e.g., performance, viability, and members' attitudes) are largely driven by various team processes (e.g., communication, coordination, strategy formulation), which in turn are influenced by various input factors (e.g., members' characteristics, team design, training, leadership). In general, research has been supportive of the mediating role of team processes in the relationships between input and outcome variables (Cohen & Bailey, 1997; Marks, Mathieu, & Zaccaro, 2001). For example, studies have shown that training and leadership interventions positively promote team performance through their influences on subsequent shared knowledge and team communication and coordination processes (Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000; Marks, Zaccaro, & Mathieu, 2000).

Collectively, the basic small group and applied work team literatures have generated a wealth of knowledge regarding the various factors that affect individual and collective behavior in teams. However, neither literature has explicitly examined how the nature of work motivation differs in teams. Indeed, in their review of the work team literature, Kozlowski and Bell (2003) concluded that "relatively little work has directly considered

the issue of motivation in teams...[and] there are no well-developed theories that explicitly incorporate the team level" (p. 360). In part, the lack of integration between the teams and motivation literatures could be attributable to the distinct levels of analysis they have focused on. In particular, the work team literature has yet to sufficiently consider individual-level outcomes and processes, while the motivation literature has yet to sufficiently consider team-level outcomes and influences (Ambrose & Kulik, 1999; Chen & Bliese, 2002; Chen & Kanfer, 2006). Given motivating teams may require different strategies than those used to motivate individuals (Chen & Bliese, 2002; Weaver, Bowers, Salas, & Cannon-Bowers, 1997), a more explicit integration of the work team and work motivation literatures is both warranted and needed.

With recent advances in and proliferation of multilevel theory and methodology (see Kozlowski & Klein, 2000), the time is now ripe to more explicitly integrate the motivation and team literatures. Accordingly, the present chapter provides a general, *multilevel* framework and road map for theorizing about and studying motivation in the context of work teams. We build this framework on recent theoretical work by Chen and Kanfer (2006), which delineated a multilevel theoretical model of motivated behavior in teams. Although the framework we provide in this chapter is largely based on Chen and Kanfer's work, we also extend their work by more comprehensively reviewing motivation-related research in teams, and explicitly considering various boundary conditions that could affect multilevel models of motivation in and of teams. Furthermore, we build on Chen and Kanfer's work by providing a detailed road map for future multilevel motivation research in teams.

Motivation *in* and *of* Teams: A Framework

Given the increased popularity of and reliance on interdependent work teams, an explicit integration of the work teams and motivation literatures can yield several important benefits for work-related theory, research, and practice. Such integration would enhance our understanding of individual-level motivation in team contexts (i.e., motivation *in* teams), as well as motivation at the team level of analysis (i.e., motivation *of* teams). From a theoretical standpoint, such explicit integration can help build a more general theory of work motivation and behavior that transcends levels of analysis. In particular, it can help uncover similarity and differences in how motivated behavior is manifested at different levels, the potential cross-level interplay or relationships between individual and team motivation, as well as the multilevel antecedents and outcomes of individual

and team motivation (cf. Chen, Bliese, & Mathieu, 2005a; Chen, Mathieu, & Bliese, 2004). Practically speaking, richer understanding of motivation in and of teams would potentially help account for additional “variance explained” in motivational and performance outcomes, and help develop more effective interventions directed at motivating team members personally (i.e., individually) and collectively (i.e., as a team).

In an explicit effort to integrate between individual motivation theory and work teams, Chen and Kanfer (2006) have recently developed a multilevel theory of motivated behavior in teams. Building on basic general systems theories (e.g., Camazine et al., 2001; Katz & Kahn, 1978; Bertalanffy, 1968) and recent advancements in multilevel theory and research (e.g., Chan, 1998; Chen et al., 2004, 2005a; Kozlowski & Klein, 2000; Morgeson & Hofmann, 1999), Chen and Kanfer have delineated three general sets of propositions, pertaining to (1) the generalizability of motivational constructs and processes across levels, (2) the cross-level relationships between individual and team motivation, and (3) antecedents of individual and team motivation. First, they argued that motivational constructs and processes, including motivational states and goal processes, are homologous (cf. Chen et al., 2005a), in that they share similar meanings and functions, as well as relate similarly to each other, across the individual and team levels. Second, they proposed that motivational processes positively promote performance at their respective levels of analysis, and further, the influences of team-level motivational processes on individual performance are stronger and more direct than the influences of individual motivational processes on team performance. Finally, extending Hackman’s (1992) classification of ambient (i.e., team-oriented) and discretionary (i.e., individual-oriented) inputs, Chen and Kanfer proposed that ambient inputs (e.g., leadership climate, team performance feedback) are more likely to directly promote team motivational processes, whereas discretionary inputs (e.g., leader-member exchange, individual feedback) are more likely to directly influence individual-level motivational processes; however, they proposed further that ambient and discretionary inputs interact to influence individual-level motivation.

Building on Chen and Kanfer’s (2006) theoretical framework, the sections that follow review relevant literature on motivation in and of teams. In reviewing this literature, we also identify remaining gaps in the study of motivation in and of teams. We organize our review and discussion around a multilevel framework (see Figure 8.1) that considers five key linkages: the extent to which key motivational concepts and processes generalize from the individual level to the team level (Linkage 1); the cross-level relationships between individual-level and team-level motivational concepts and processes (Linkage 2); potential motivators, or antecedents, of individual and team motivation (Linkage 3); multilevel outcomes of motivation in and of teams (Linkage 4); and potential bound-

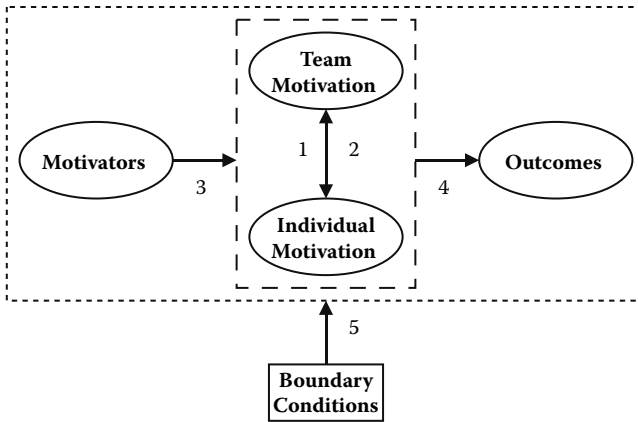


FIGURE 8.1

A multilevel framework for studying motivation in and of teams.

ary conditions affecting the nature and function of motivation in and of teams (Linkage 5). To help stimulate and guide research derived from this framework, we review relevant prior research and identify specific gaps that remain to be addressed in future research.

We organize the discussion by building on basic concepts and processes delineated in motivation theories. Employee motivation is often defined in terms of the internal forces that direct, energize, and sustain work-related effort (Kanfer, 1990). More specifically, work motivation consists of three core components: (1) *goal generation* (i.e., choosing where and how to allocate one's effort), (2) *goal striving* (i.e., regulating one's effort during goal pursuit), and (3) *motivational states* (i.e., beliefs regarding the work environment and one's interest in and capacity to operate effectively in that environment) (see Kanfer, 1990). According to Klein, Austin, and Cooper (this volume), there are positive relationships among these set of core motivational constructs, such that more positive motivational states act as direct (i.e., proximal or immediate) drivers of the manner in which individuals generate goals and strive to accomplish their goals. For instance, research has shown that self-efficacy positively predicts the choice of more difficult goals, planning activities, and persistence in effort directed at goal accomplishment (Bandura, 1997; Locke & Latham, 1990; Latham & Pinder, 2005). Thus, the common thread between theories of work motivation is that employees are goal driven. That is, based largely on how they perceive themselves vis-à-vis their work environment (captured by motivational states), employees decide how, when, and where to allocate their effort at work (captured by goal generation and goal-striving processes). We next discuss how these basic motivational concepts and theories might generalize to the team level of analysis.

Generalizability of Motivational Concepts to the Team Level

Chen et al. (2004) have discussed the notion of “multilevel constructs,” or constructs that maintain similar conceptual meaning at multiple levels of analysis. For instance, researchers have used various personality traits, such as conscientiousness and agreeableness, to describe individual and team characteristics (Barrick et al., 1998; Hofmann & Jones, 2005). Multi-level constructs are powerful in that they allow for more parsimonious explanation of phenomena that transcend levels of analysis. In the motivation domain, researchers have begun to generalize motivational states, such as efficacy beliefs and sense of empowerment, to the team level. Further, research on small groups and teams has delineated various team processes that share similar meanings and functions to goal generation and goal-striving processes (Chen, Thomas, & Wallace, 2005b; Marks et al., 2001). Building on this work, Chen and Kanfer (2006) proposed that the three key aspects of motivation—goal generation, goal striving, and motivational states—can generalize well to the team level of analysis.

However, it is important to note that generalizing motivational constructs, or any other constructs, across levels is challenging. From a conceptual standpoint, it is often difficult to identify how or whether a construct maintains its validity (i.e., meaning and function) when moving from one level to another (see Morgeson & Hofmann, 1999). From a methodological or measurement perspective, simple aggregation of average levels of individual motivation in teams may not suffice when trying to capture the same motivation phenomena at higher levels of analysis, and alternative, more direct team-level measures may need to be developed and validated (Chan, 1998; Chen et al., 2004; Kozlowski & Klein, 2000). Chapters by Ployhart (this volume) and Dalal and Hulin (this volume) discuss these issues in the context of motivation theory. In this section, we focus on research in the motivation and team literatures that supports the generalizability and applicability of key individual-level motivational constructs to the team level, but we also identify areas for additional research needs on this topic of generalizability.

Motivational Processes: Goal Generation and Goal-Striving Processes

Motivational processes capture actual *behavioral* manifestations of the direction, intensity, and persistence of effort. These aspects of motivation can be mapped onto two interrelated sets of processes: goal generation and goal striving. Goal generation processes involve activities undertaken for the purpose of evaluating and selecting among possible goals or courses of action, as well as planning activities undertaken for the purpose of guiding goal accomplishment (e.g., Locke & Latham, 1990). The team literature

has identified team processes similar to goal generation, which Marks et al. (2001) referred to as transitional processes. Team transition processes include various interdependent team activities directed at generating goals, such as *mission analysis* (i.e., interpretation and evaluation of the team's mission or task), *goal specification* (i.e., identification and prioritization of team goals and subgoals), and *strategy formulation and planning* (i.e., development of particular courses of action for goal accomplishment). For example, project teams charged with designing a new car might first study industry and market trends, then specify design objectives, and then generate a specific timeline and plans for accomplishing the objectives. These transition activities are highly consistent with the individual-level goal generation processes, both in their function and in their timing during performance episodes. In particular, at both the individual and team levels, goal generation processes occur prior to actual task engagement, with the main purpose being generation of a clear "road map for action" (Chen & Kanfer, 2006; Marks et al., 2001).

In contrast to goal generation processes, goal-striving processes involve the regulation of effort during actual goal pursuit. At the team level, Marks et al. (2001) delineated a set of interdependent team action processes, which are functionally similar to goal-striving processes (Chen & Kanfer, 2006). Team action processes include *monitoring progress toward goals* (i.e., assessing how the team does relative to its mission/task goals), *system monitoring* (i.e., tracking material resources and environmental conditions as they relate to mission accomplishment), *team monitoring and backup behaviors* (i.e., assisting team members in performing their task roles), and *coordination* (i.e., orchestrating the sequence and timing of interdependent actions). The many scenes from the popular show *ER* involving emergency operation teams in action provide a good illustration of how these team action processes manifest. Although these action/goal-striving processes are distinct from transition/goal generation processes (in both their function and timing), the two sets of processes are interrelated. In particular, goal generation processes set the stage, or guide, goal-striving processes. Therefore, the more positive or effective goal generation processes are (in terms of providing an appropriate and sufficiently complete road map for action), the more positive or effective goal-striving processes are likely to be (in terms of effective execution of task goals and plans).

Clearly, a key difference between individual- and team-level goal processes is that team processes are manifested through coordinated action and collective exchanges among members. That is, individual-level goal processes are mostly cognitive in nature, whereas team-level goal processes, while also involving *shared* cognition, have a much greater underlying social component (Chen & Kanfer, 2006). Nonetheless, two recent studies have supported the generalizability of goal generation and goal-striving processes from the individual to the team level of analysis. In a

laboratory study of simulated radar teams, DeShon et al. (2004) differentiated between strategy and effort directed at individual tasks or roles within the team (individual-level goal generation and striving) and strategy and effort directed at collective team tasks (team-level goal generation and striving). Effort and strategy were operationalized using computer-generated data regarding actual strategy-related and effort allocation behaviors directed at individual or team tasks. These authors found that strategy and effort positively and similarly promoted task performance at both the individual and team levels.

In a study of simulated helicopter flight teams, Chen et al. (2005b) operationalized individual and team motivational processes somewhat differently than DeShon et al. (2004). In particular, Chen et al. captured *individual* goal generation and goal-striving processes by asking individuals to report the extent to which they *personally* engaged in transition and action behaviors delineated by Marks et al. (2001). Team goal generation, in contrast, was measured using subject-matter experts' behaviorally anchored ratings of Marks et al.'s *team*-level transition and action processes. Another distinction between the operationalizations in the two studies was that DeShon et al. measured both effort and strategy at the same task engagement stage, whereas Chen et al. measured goal generation processes at different task engagement stages (prior to and during a simulated flight). Despite differences in measurement approaches, Chen et al.'s study replicated DeShon et al.'s finding that goal-striving processes positively predicted performance at both the individual and team levels. However, unlike DeShon et al.'s study, goal generation processes only indirectly predicted performance at both levels, through their positive influence on goal-striving processes. These differences in findings are perhaps not surprising, given Chen et al. measured goal generation and goal striving at different phases of the performance episode. In sum, there is initial empirical evidence that goal generation and goal-striving processes are functionally similar across the individual and team levels of analysis.

Motivational States

Unlike motivational processes, motivational states do not involve actual behaviors, but instead capture beliefs or attitudes regarding experiences within a task environment and perceived capacity to perform tasks within the task environment. Given this broad definition, it is not surprising that researchers have delineated a plethora of motivational states. However, what is common to all motivational states is that they are proximal and powerful drivers of the motivational processes of goal generation and goal choice (see Kanfer, 1990). For instance, individual-level research has shown that self-efficacy (beliefs regarding task-specific capabilities) positively relate to the level and type of goals individuals choose to pursue

(e.g., Chen, Gully, Whiteman, & Kilcullen, 2000; Phillips & Gully, 1997). Rather than providing a comprehensive review of all possible motivational states, in this section we discuss a set of motivational states studied at both the individual and team levels of analysis.

As summarized in Table 8.1, the team literature has attempted to generalize multiple motivational states from the individual level to the team level. What is common to all definitions is that they maintain some level of

TABLE 8.1**Definitions of multilevel motivational states**

Construct	Individual-level definition	Team-level definition
1. Efficacy	Self-efficacy: Belief in one's capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1997)	Collective/team efficacy: A team's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments (Bandura, 1997)
2. Empowerment	Individual empowerment: Belief in one's autonomy and capability to perform meaningful work that can impact his or her organization (Thomas & Velthouse, 1990)	Team empowerment: A team's shared belief in their autonomy and capability to perform meaningful work that can impact their organization (Kirkman & Rosen, 1997)
3. Organizational and team commitment	Individual commitment: The relative strength of an individual's identification with and involvement in a particular collective, such as team or organization (Mathieu & Zajac, 1990; Bishop & Scott, 2000)	Team commitment: A team's shared identification with and involvement in a particular collective, such as team or organization (Bishop & Scott, 2000)
4. Goal commitment	Individual goal commitment: One's determination to reach a goal (Locke & Latham, 1990)	Team goal commitment: A team's shared determination to reach a goal (Durham, Knight, & Locke, 1997)
5. Justice	Individual justice: Extent to which an individual is perceived to be treated fairly (Colquitt, 2001)	Team justice: Shared perceptions of team members regarding how fairly the team as a whole is treated (Roberson & Colquitt, 2005)

Note: Some definitions are adapted or paraphrased from, rather than directly quoted from, the cited articles.

similar meaning across levels, albeit the “agent,” or referent, of the definitions differs across levels. For instance, both self-efficacy and team efficacy pertain to beliefs regarding task-related capabilities; however, self-efficacy focuses on individuals’ capabilities to perform individual tasks, whereas team efficacy focuses on the collective capability of a team to perform their tasks. Likewise, individual justice involves one’s perceptions of how fairly he or she is treated, whereas team justice pertains to a shared perception among team members regarding how fairly their team as a whole is treated.

However, despite the similarity in their conceptualization, a key distinction between individual and team motivational states is that team-level states assumed shared cognitions among team members regarding the focal phenomena. These shared cognitions or beliefs are believed to develop over time, as team members share common experiences and interactions in their task environment. For instance, members of an advertising team may share positive perceptions of team efficacy following a successful launch of an advertising campaign. In this example, however, individual members may still differ in their individual perceptions of self-efficacy, depending on how well they executed their own sets of tasks during the broader campaign undertaken by their team.

Studies have found that various motivational states relate to goal generation and goal-striving processes, as well as to performance, similarly across the individual and team levels. For instance, meta-analyses have uncovered similar magnitudes of correlations between self-efficacy and individual performance (estimated true score $r = .38$; Stajkovic & Luthans, 1998) and between team efficacy and team performance (estimated true score $r = .39$; Gully, Incalcaterra, Joshi, & Beaubien, 2002). Likewise, research has detected similar positive relationships between empowerment and performance at the individual and team levels of analysis (e.g., Chen, Kirkman, Kanfer, Allen, & Rosen, 2007). In addition, studies have shown that goal generation and goal-striving processes tend to mediate between motivational states such as efficacy beliefs and goal commitment and performance at both the individual and team levels of analysis (Aube & Rousseau, 2005; Chen et al., 2005b; DeShon et al., 2004; Durham et al., 1997).

Research on organizational and team commitment also shares some similarity. At the individual level, the bulk of the research has focused on individuals’ attachment to, or identification with, their organization or work units, which motivates individuals to work harder on behalf of their organization or work unit (Mathieu & Zajac, 1990). Similarly, research on social identity has proposed that individuals are more motivated to work on behalf of their groups when they identify with the group’s causes and goals, or when there is congruence between their self-identity and their group’s collective identity (Ellemers, de Gilder, & Haslam, 2004). In

support, similar to individual research on organizational commitment, research has found that team commitment positively promotes team-related effort and performance (e.g., Bishop, Scott, & Burroughs, 2000; Pearce & Herbig, 2004). Team cohesion, which subsumes team commitment as well as the related states of group pride and interpersonal attraction, more broadly captures team members' psychological attachment to their team (Festinger, 1950; Gross & Martin, 1952). Like findings involving individual organizational commitment, research on cohesion has shown that a higher level of cohesion in teams motivates higher levels of collective effort and performance (Beal et al., 2005).

Likewise, according to Roberson and Colquitt (2005), shared justice in teams should promote a higher level of collective effort and performance in teams, similarly to the motivational effects of perceptions of justice detected at the individual level. Indeed, a study by Colquitt, Noe, and Jackson (2002) found initial support for this expectation, in showing that the team procedural justice climate positively related to team performance, and negatively to team absenteeism. These findings mirror the motivational and behavioral outcomes of individual perceptions of justice (see Colquitt et al., 2001), suggesting that individuals and teams react similarly to how fairly (or unfairly) they are treated at work.

Thus, in addition to the development of similar conceptualizations of motivational states across levels, research has been supportive of the similar motivational outcomes (or functions) of motivational states across the individual and team levels. Together with multilevel research on motivational processes, there is now emerging evidence that the key building blocks of motivation generalize well to teams. This is perhaps not surprising, given motivation centers around goal pursuit, and in light of the fact both individuals and teams in work organizations pursue goals (see Chen & Kanfer, 2006). However, as we discuss next, more research is needed in order to ascertain the extent to which motivational concepts generalize to the team level.

Research Needs

Although initial research has been supportive of the generalizability of motivational states and processes to the team level, there remain gaps that need to be addressed in future research. First, we have already alluded to the fact researchers have used different measurement approaches to capture motivational processes across levels (cf. Chen et al., 2005b; DeShon et al., 2004). What is needed is more systematic investigation of which measurement approaches best capture and maintain the meaning of particular motivational constructs across levels. For instance, "referent-shift consensus" measures of team-level constructs, which use the team as opposed to the individual as a referent (Chan, 1998), are likely to better maintain the

meaning of motivational concepts across levels. In part, this is because referent-shift measures are more likely to be shared among team members, relative to additive measures that simply average perceptions of the individual, as opposed to the collective team agent (Klein, Conn, Smith, & Sorra, 2001). Indeed, a meta-analysis by Gully et al. (2001) found that relationships between team efficacy beliefs and team performance were stronger when using referent-shift consensus measures of team efficacy, as opposed to measures of self-efficacy averaged to the team level. Thus, aligning the level of measurement and the level of theory is critical to ensure the validity of team-level motivation measures (Chan, 1998; Chen et al., 2004; Kozlowski & Klein, 2000). For additional discussion of measurement approaches for capturing team-level constructs, see Chan (1998), Chen et al. (2004), and Tesluk et al. (1997).

Beyond measurement, more research is needed to establish potential similarity in the broader nomological network of motivational constructs across levels. To do so, researchers should develop homologous models in which parallel relationships among similar individual-level and team-level motivational variables are delineated and tested (Kozlowski & Klein, 2000). The studies by Chen et al. (2005b) and DeShon et al. (2004) summarized above provide initial attempts to develop and test multilevel models of homology in the motivation domain. Chen et al. (2005a) proposed a framework for developing and testing theories and models of multilevel homology, which can help facilitate additional research attempting to generalize motivational models from the individual to the team level of analysis. Ultimately, multilevel homology research would help uncover the extent to which relationships involving similar motivational constructs relate similarly or differently to other variables across levels.

Another area future research should consider involves the setting within which multilevel studies of motivation are conducted. In particular, in contrast to the large amount of both field and laboratory research on individual and team motivational states, there has been a paucity in multilevel field research on motivational processes (see Mathieu et al., 2006, for notable exception). This may stem in large part on the difficulty in capturing real-time process data in the field. Instead, field studies often rely on cross-sectional self-reported data, which often lack the sensitivity needed to capture the iterative, complex, and longitudinal nature of team processes (Weingart, 1997). To more fully capture motivational processes in field studies, researchers can rely on alternative methods of measurement and collect longitudinal data. For instance, researchers could triangulate data collected from multiple sources (team members, leaders, customers) over multiple time periods with coding of team communication data (cf. Tesluk et al., 1997). Of course, these suggestions are easier said than done. Obtaining multilevel data in field settings often leads to trade-offs between sample size and the richness of data collected.

Cross-Level Interplay Between Individual and Team Motivation

As we alluded to in the beginning of the chapter, traditional theories and models of work motivation have tended to focus on individual (and intra-individual) processes, and have not sufficiently attended the role of contextual influences on individual motivation. According to systems-based views (e.g., Katz & Kahn, 1978), organizations are composed of social systems that are both nested within and mutually influence each other. As Boswell et al. (this volume) suggest, firm-level systems, policies, and practices likely influence subunits within the firm, but are also influenced by factors that originate outside the organization (e.g., market competition, labor supply, government regulations). In the same vein, there are likely bidirectional, mutual influences between individual members and their teams (Chen & Kanfer, 2006). In the motivation domain, individual-level motivational states and processes are likely to feed directly into team-level motivational states and processes, and vice versa. Accordingly, this section builds on the previous section by considering the potential cross-level interplay between individual and team motivational constructs and processes (Linkage 2 in Figure 8.1). In particular, what are possible bottom-up influences of individual motivation on team motivation, as well as potential top-down influences of individual motivation on individual motivation (cf. Kozlowski & Klein, 2000)? Addressing these questions can develop a more complete account for the contextual factors affecting individual motivation in teams, as well as expand the criterion domain of individual motivation to include influences on higher-level outcomes.

Top-down, or contextual, effects of team motivational states and processes on individual states and processes can take on three forms: direct, mediated (or indirect), and moderating effects (Chen & Kanfer, 2006; see also Kozlowski & Klein, 2000, Mathieu & Taylor, 2007). Direct and indirect top-down effects can occur between similar motivational constructs across levels (e.g., between team efficacy and self-efficacy, or team goal generation processes and individual goal generation processes), as well as between different motivational processes across levels (e.g., between team efficacy and individual goal-striving processes). For instance, there is evidence that self- and team efficacy beliefs are positively related (e.g., Chen & Bliese, 2002; Jex & Bliese, 1999), as are individual and team empowerment (Chen et al., 2007) and perceptions of justice (Colquitt, 2004). There is also evidence for cross-level relationships between different motivational variables. For example, studies have found that a justice climate predicts helping behaviors and job attitudes beyond individual perceptions of justice (Mossholder, Bennett,

& Martin, 1998; Naumann & Bennett, 2000). Further, Chen and Kanfer (2005) found that team efficacy predicted individual motivational processes beyond self-efficacy, albeit indirectly, through its impact on team motivational processes. Detecting such direct and indirect cross-level effects can help explain how individual motivation in teams is shaped by team-level motivation.

Cross-level moderating effects concern how relationships between individual-level variables might differ or vary, depending on team-level variables. A two-sample study by Colquitt (2004), for example, found that individual team members' own justice perceptions more positively related to individual performance when such individual perceptions were high and consistent with justice perceptions of other team members. In another study, Chen et al. (2007) found that the positive influence of individual empowerment on individual performance in teams diminished as levels of team empowerment increased, such that individual performance remained high irrespective of individual empowerment when team empowerment was high. These findings suggest that team-level motivation can either facilitate or supplement the effects of individual-level motivation on behavior in teams. Thus, capturing team-level motivational processes can greatly inform our understanding of individual-level motivational processes in team contexts.

Although several researchers have recently begun to study top-down motivational influences, we know far less about bottom-up influences of individual motivation on team motivation. In contrast to top-down effects, bottom-up effects of individuals on teams are generally less immediate and pronounced than top-down effects of teams on individuals (Kozlowski & Klein, 2000). Indeed, team members can often compensate for a single de-motivated member (e.g., via backup behavior or norm enforcement; cf. Porter, 2005), whereas it may be much more difficult, and take substantially more effort, for one motivated member to positively motivate a de-motivated team. Yet, bottom-up effects of individual-level motivation on team-level motivation are likely to occur. For instance, more efficacious individuals are likely to believe in their capability to contribute to team success, and hence to also possess higher team efficacy (Chen & Bliese, 2002). In addition, when individuals engage in more effective goal generation and goal-striving processes, they help their teams generate goals and strive for goals more effectively. The studies mentioned in the previous paragraph provide partial support for these bottom-up effects, given cross-level relationships between motivational variables most likely contain simultaneous top-down and bottom-up effects (Chen & Kanfer, 2006). However, how much these cross-level relationships reflect top-down influences, and how much bottom-up influences, remains unclear.

Research Needs

The preceding discussion indicates there is likely strong coupling between individual and team motivational states and processes. However, more research is needed to examine the potential cross-level relationships between individual and team motivational states and processes. Several research avenues are particularly interesting to pursue at this point. First, in addition to establishing relationships between similar constructs across level (e.g., between individual and team justice perceptions, or between individual and team goal-striving activities), researchers should examine whether relationships between different motivational constructs and processes exist across levels. For instance, how might individual and team motivational states combine to influence subsequent individual-level motivational processes?

Another area beseeching additional theory development and empirical research concerns the relative prevalence of top-down motivational effects, relative to bottom-up motivational effects. Given general multi-level principles suggest that top-down effects are more immediate and powerful than bottom-up effects (Kozlowski & Klein, 2000), it is important to gain better understanding of when and how individual motivation most likely influences team motivation. For instance, it is possible that individual motivational states, such as self-efficacy and perceived justice, have particularly strong influence on parallel team motivational states (i.e., team efficacy and justice) during early stages of team development (i.e., during formation and early team interactions). Additionally, goal-striving behaviors of specific individuals might have particularly strong influence on team-striving behavior and performance when individuals perform tasks that are more critical to team success. As an example, whether a kicker scores a 40-yard field goal matters substantially more when it determines the outcome (winning or losing) at the last seconds of a football game. Of course, it is also possible for top-down team influences on individual motivation to be more powerful in some situations than others. Thus, despite initial evidence pertaining to the strong coupling of individual and team motivation, much remains to be learned about when, how, and why individual-level motivational constructs and processes relate to team-level motivational constructs and processes.

From a methodological perspective, it is extremely difficult if not impossible to tease out top-down effects from bottom-up effects in cross-sectional and correlational studies, given bottom-up and top-down influences likely occur simultaneously and iteratively over time. Hence, multilevel experimental and longitudinal studies are more likely to shed light on this question. In experimental settings, researchers can specify a priori, and then test empirically, the timing at which individual influences versus team influences occur. For instance, simulations of managerial or flight teams can create planned crisis situations that require particular

individual members to exhibit effective goal generation or goal-striving behaviors. Another methodological challenge is that team-level effects on individuals are more easily detected when teams are more reliably different from each other on key conceptual phenomena (e.g., when there are more reliable between-team differences in team empowerment or commitment). As such, sampling strategies can play a major role in increasing the likelihood of detecting cross-level effects (for additional discussion of this issue, see Bliese, 2000; Chen et al., 2004).

Multilevel Antecedence and Outcomes of Motivation in and of Teams

The two preceding sections summarized research that supports the functional similarity of key motivational constructs across the individual and team levels (Linkage 1 in Figure 8.1), as well as the interconnectedness of motivational constructs across the individual and team levels of analysis (Linkage 2 in Figure 8.1). To more fully understand motivation in and of teams, however, it is important to also understand the multilevel antecedents (Linkage 3 in Figure 8.1) and outcomes (Linkage 4 in Figure 8.1) of individual and team motivation.

A key question pertaining to the third linkage is whether the same motivators or input variables affect individual-in-team and team motivation. In other words, do organizations, managers, and team leaders need to employ different, complementary, or competing strategies for facilitating motivational states and processes at each level? As summarized in various chapters in this book, there is a plethora of theory and research pertaining to how individual differences, work design, and leadership influence individual-level motivational processes, as well as indicators of team motivation, such as team efficacy and empowerment. For instance, a program of research by Pritchard and colleagues (2002) delineated a sophisticated multilevel system of performance measurement and feedback that impacts motivation and behavior across levels of analysis. Moreover, the leadership literature has distinguished between average leadership style, which likely impacts all individuals in a collective similarly, and dyadic leader-member exchanges, which could differentially affect individuals in a collective (Zaccaro et al., this volume). Hackman (1992) more broadly reviewed classic social psychological research pertaining to group influences on individuals. This body of work provides a solid foundation on which to address the question of whether the same or different antecedents influence motivational state processes at the individual and team levels.

Building on Hackman's (1992) classification of group influences on individuals, Chen and Kanfer (2006) proposed that ambient (i.e., team-oriented) and discretionary (i.e., individual-oriented) inputs differentially influence team and individual motivation, and also interact to influence individual motivation. Specifically, ambient inputs (e.g., shared leadership climate, feedback regarding prior team performance) pervade the team as a whole, and are therefore likely to more directly and strongly influence the team relative to individual motivation. In contrast, discretionary inputs (e.g., the relationship between a leader and a particular team member, feedback pertaining to prior individual performance) are directed at particular members and not necessarily the team as a whole, and hence are likely to more directly and strongly influence the individual relative to team motivation. Further, team-oriented (ambient) motivators can synergistically interact with individual-oriented (discretionary) motivators to influence individual motivation, since the alignment of motivating inputs at both levels provides a more conducive environment for individual motivation.

Providing initial support for Chen and Kanfer's (2006) theoretical expectations, Chen and Bliese's (2002) study of military units found that leadership climate, a form of ambient input, more directly and strongly predicted collective (unit) efficacy than soldiers' self-efficacy. In another study conducted on teams in the service industry, Chen et al. (2007) found that empowering leadership climate (an ambient input) more strongly promoted team empowerment relative to individual empowerment, whereas members' perceived individual exchanges with their team leader (i.e., leader-member exchange, which is a form of discretionary input), more strongly promoted individual empowerment than team empowerment. Chen et al. further found that an empowering leadership climate indirectly related to individual empowerment, through leader-member exchange, and interacted with leader-member exchange to influence individual empowerment, such that leader-member exchange had a more positive influence on individual empowerment when the empowering leadership climate was high, rather than low. Additional support for Chen and Kanfer's (2006) propositions was provided in another military study conducted by Hofmann et al. (2003), which found that group safety climate (another form of ambient input) positively facilitated the individual-level relationship between leader-member exchange and motivation to engage in safety-related behaviors (measured as the extent to which employees considered safety as part of their formal work role).

The key implication from this emerging line of research is that managers and organizations cannot expect the same practices or behaviors to automatically motivate team members both personally and collectively. Rather, a more sophisticated understanding and application of the unique and complementary means by which individual and team motivation can be managed is needed. Particularly, the initial evidence summarized

above indicates that ambient motivators that pervade the team as a whole are likely to directly promote team motivation, and help facilitate the impact of discretionary motivators that target particular members individually, which more directly influence individual motivation.

In contrast to the antecedents of motivation, there is strong evidence that motivational constructs similarly promote effective performance at both the individual and team levels. For instance, individual-level and team-level studies have shown that more difficult and challenging goals positively promote performance at both the individual and team levels (Locke & Latham, 1990; O'Leary-Kelly, Martocchio, & Frink, 1994). Likewise, as mentioned earlier, self-efficacy and team efficacy similarly and positively relate to task performance at their respective levels (Gully et al., 2002; Stajkovic & Luthans, 1998). There is also evidence that engagement in more effective strategy formulation (i.e., goal generation) and effort allocation (i.e., goal striving) similarly promote performance at both the individual and team levels (e.g., Chen et al., 2005b; DeShon et al., 2004). Thus, from the standpoint of homology, individual-level and team-level performance are influenced by similar motivational drivers.

However, as discussed earlier, individual and team motivation do not occur in isolation from each other. As such, one would expect that motivational processes at one level might affect performance outcomes at a different level, and do so directly, indirectly, or in some interactive combination with motivational variables at the other level. Indeed, the multilevel studies by Colquitt (2004) on justice and by Chen et al. (2007) on empowerment we reviewed earlier showed that team-level motivational states can weaken or strengthen the individual-level relationships between motivational states and performance. In addition, a laboratory study on simulated flight teams by Chen and Kanfer (2005) found that individual-level and team-level goal-striving processes uniquely and positively influence individual performance in teams. Furthermore, since team performance is at least partially based on the aggregation of individual performance of members to the team level (cf. Ployhart, 2004), it is perhaps not surprising that research has found that individual-level motivational states and processes indirectly promote team performance, through their positive impact on individual performance in teams (Chen, 2005; Chen & Kanfer, 2005; Chen et al., 2007). In sum, there is evidence that motivational states and processes at one level (individual or team) do in fact play influential roles in shaping performance at a different level (individual or team).

Research Needs

Additional research is also needed to enhance our understanding of the multilevel antecedents and outcomes of motivation in and of teams.

A simple yet important extension of the initial research summarized above would involve studying additional motivational states, as well as more integrative models that include wider range of motivational indices across levels. For instance, it is important to consider the unique influences of various motivational states and different aspects of goal generation and goal-striving processes on performance outcomes across levels. Further, more work is needed to establish the manner in which motivational states and processes at one level influence behavioral and attitudinal outcomes at another level. Such research would help develop more in-depth understanding of how various aspects of motivation combine to affect performance and attitudes across levels. In conducting such research, it is again important to carefully consider the validity and appropriateness of measurement and sampling approaches, which we discussed earlier.

Researchers should also expand our understanding of the various input factors that combine to affect motivation at the individual and team levels. For instance, to help guide team staffing strategies, it is important to examine how members' characteristics affect motivational states and processes across levels (e.g., Barrick et al., 1998), as well as how individual characteristics could be combined to form the most effective teams (e.g., Stewart et al., 2005). It is also important to study how different human resource management functions, such as selection, work design, compensation, and performance management, can be best aligned such that they produce the best combination of individual and team motivation (cf. chapters by Parker et al. and Boswell et al. in this volume). Since, historically, many human resource management functions targeted individuals, as opposed to teams, modifying such functions to fit interdependent teams requires that organizations adopt a systems-based perspective (Ostroff et al., 2000; Ployhart, 2004; Pritchard, 1992).

On the criterion side, we know far less about how motivation in and of teams affects attitudinal outcomes, such as satisfaction and intentions to remain with team or the organization, as well as viability-related outcomes capturing the capability of the team (and individuals within the team) to maintain a high performance level over time. Studies are needed to examine whether and how team and individual motivational variables combine to influence team members' attitudes. Moreover, longitudinal studies are needed to examine the factors allowing teams and their members to improve their performance over time, as well as to maintain high levels of performance over time (e.g., see Chen, 2005; Mathieu & Woods, 2005).

Boundary Conditions Affecting Motivational Phenomena in and of Teams

Up to this point, we have delineated a multilevel framework for studying motivation in and of teams, and discussed some particular research needs around the linkages specified in the framework. In this section, we focus on the fifth and final linkage in Figure 8.1, involving potential boundary conditions affecting motivation in and of teams. Specifically, what are some critical boundary conditions, or moderating variables, affecting the meaning of team or collective motivation, the interplay between individual and team motivation, and potential multilevel antecedents and outcomes of motivation in and of teams?

Team Type

The team literature has recognized that there are different forms of teams in work organizations, which differ on various structural and membership characteristics, such as the kinds of tasks performed by the team, the authority and hierarchy of members within the team and the organization, the extent to which the team is permanent or temporary, and the level of member specialization (see Sundstrom, 1999). For example, top management teams have much higher authority within an organization relative to service teams (e.g., those working in department stores). Project teams often include members with a higher level of specialization (e.g., electrical engineers working together with managers from marketing and sales) and are more temporary than production teams working in automobile assembly lines. Another important distinction concerns the permanency of teams, and whether teams perform the task over multiple times (e.g., action teams, such as surgical or search-and-rescue teams) or are formed only to perform a single task (e.g., ad hoc committees and many project teams).

Teams residing at higher organizational levels (e.g., management and project teams) are more likely to have members that are also leaders of lower-level teams or subunits than are members of teams residing at lower organizational levels (e.g., action, service, and production teams). As such, managing individual members through discretionary inputs is likely to have greater consequence at higher organizational levels, where enhancing individual member motivation can also cascade down to affect lower-level teams or subunits. In addition, as teams reside at higher levels within the organizational hierarchy, discretionary and ambient inputs are more likely to originate outside the organization (e.g., they may be based on changes in industry-level trends or the labor market). Moreover, when teams reside at higher levels in the organization, their motivation and performance can affect criteria at increasingly higher levels (e.g., top

management teams are much more likely to affect firm-level outcomes than production teams; cf. Barrick et al., 2007). Also, given teams at higher organizational levels perform more decision-making tasks, the performance of such teams (e.g., management and project) is more likely to be driven by goal generation processes, relative to goal-striving processes. In contrast, goal-striving processes may be more predictive of task performance in lower-level teams (particularly service and production teams).

These are but a few examples of how the tasks performed by teams and their hierarchical level within the organization could affect motivation in and of teams. In discussing these, we have attempted to make the point that understanding motivation and behavior in and of teams becomes increasingly more complex at higher organizational levels, where team phenomena are more substantially affected by factors at the organization level and beyond, and where team-level phenomena are more likely to cascade down and affect other individuals and collectives within the organization. Thus, although a systems-based view of teams is critical at all levels, it is particularly useful when studying teams at higher organizational levels.

Differences associated with team permanency and role specialization can also affect motivational processes in and of teams. For instance, some motivational states, such as commitment, are less likely to fully develop in more temporary teams, such as flight crews in commercial aviation, which are often formed for a single flight, after which they disband. In such temporary teams, it may be more important to manage individual motivation than team motivation, given individual roles and teamwork are highly proceduralized by training and design (e.g., Helmreich & Wilhelm, 1991). In contrast, in more permanent teams (e.g., action, management, service), individual roles are more likely to develop and be negotiated over time, as individuals perform in in-tact teams over longer periods of time, and often over multiple performance episodes. Thus, the various multilevel relationships delineated in the literature reviewed above (e.g., those proposed by Chen & Kanfer, 2006) are more likely to hold in more permanent teams than in highly temporary ones. With respect to role specialization, another potential implication is that a greater array of discretionary inputs may be applicable as role specialization across members increases, given it becomes easier to differentially manage members working on more different, as opposed to more similar, tasks. Clearly, then, testing the extent to which multilevel models of motivation in and of teams hold across different team types provides fruitful grounds for future research.

Team Interdependence

Another important characteristic of teams is interdependence. In fact, a major assumption in our discussion of multilevel relationships involving

motivation in and of teams was that team members are at least somewhat interdependent. As stated by Kozlowski and Bell (2003, p. 363), interdependence “is a feature that should be explicitly addressed—either as boundary condition or a moderator—in all work on groups and teams.” Teams can differ on various aspects of interdependence, including their goals, actual tasks performed by members, and performance feedback and rewards available to members (Campion et al., 1993; Saavedra et al., 1993).

In one study, Aube and Rousseau (2005) found that the relationship between team goal commitment and performance was more positive when team task interdependence was high, rather than low. Meta-analyses of team efficacy (Gully et al., 2002) and team cohesion (Gully et al., 1995) have shown further that relationships between team motivational states and team performance become more positive as team interdependence increases. Two multilevel studies have also considered the moderating role of interdependence. In a study by Colquitt (2004), greater disparity between self and others’ perceptions of justice in teams resulted in more negative outcomes when team task interdependence was higher. In another multilevel study, Chen et al. (2007) found that members of high interdependent teams were more likely to agree in their perceptions of team empowerment, and team empowerment positively predicted team performance in high but not in low interdependent teams. Collectively, these findings suggest that team interdependence is a critical boundary condition affecting the very meaning of team-level motivational constructs, as well as team-level and cross-level relationships involving motivational constructs.

However, more studies are needed to consider the moderating role of interdependence in multilevel models of work motivation. Multilevel studies should particularly consider how the meaning of motivational concepts might be more or less relevant across levels of interdependence; indeed, it makes little sense to talk about collective team motivation when considering work settings in which employees work fairly independently of each other (secretarial work, car sales), given collective influences are likely to be weaker in such settings. Furthermore, studies should go beyond simple operationalizations of interdependence and examine how different forms of interdependence (goal, task, and feedback/reward) combine to affect multilevel models of motivation in and of teams (cf. Saavedra et al., 1993).

Team Developmental Stages

Beyond team characteristics and types, another potential boundary condition involves team developmental stages, and particularly the formation, socialization, and development of teams over their life span (Kozlowski & Bell, 2003). The team literature has developed several theoretical models that delineate the processes of team development (e.g., Gersick, 1988; Tuck-

man, 1965). Building on these models, conceptual work by Kozlowski and his colleagues (Kozlowski et al., 1996, 1999) proposed that the focus of self-regulated behavior changes over time during team development, beginning with a focus on learning individual roles early on, later on shifting to mastering dyadic exchanges between team members, and, finally, in more mature teams, focusing on collective team activities. Based on this longitudinal theoretical model, the relative importance of enhancing individual versus team motivational states and processes changes over time, with promotion of individual motivation being more important during early stages of team development, and the promotion of motivation at the team level becoming more important as the team matures. Furthermore, the relative importance of bottom-up and top-down effects in teams likely changes over a team's life span, with bottom-up influences of individuals on teams being more critical early on, and top-down influences of teams on individuals being more powerful later on.

Several additional boundaries for the multilevel framework discussed earlier in the chapter can be extrapolated based on Kozlowski et al.'s (1996, 1999) work. First, the very content or meaning of motivational processes might differ over time. For instance, DeShon et al.'s (2004) study examined learning during early stages of team development, and therefore their individual-level goal generation and goal-striving measures focused on strategy and effort directed at performing individual roles within the team. In contrast, Chen et al.'s (2005b) study examined teams in post-training environments (i.e., later stages of team development), and therefore their individual-level goal generation and goal-striving measures focused on individual effort directed at helping the team generate and strive for the goal. Another important implication of this team life span perspective is that leaders should differentially apply ambient and discretionary inputs over time, given the relative importance of discretionary inputs is likely higher during early stages of team development, and the importance of ambient inputs becomes greater during later stages of team development. Thus, taking a longitudinal team life span perspective can refine and enrich our understanding of motivation in and of teams.

Cultural Differences

As a result of the increase of globalization, work organizations and work teams have become increasingly more diverse (Mannix & Neale, 2005). For instance, many organizations rely on multinational teams, which include members from different national and cultural backgrounds (e.g., Earley & Gibson, 2002). Members in such teams often hold different cultural values, such as power distance and collectivism, which could affect

their level of motivation in teams, as well as the manner in which leaders motivate members (see Kirkman, Lowe, & Gibson, 2006a). For instance, team members high on collectivism value contribution to a collective cause, and therefore might be more inclined to work hard on behalf of their team (e.g., see Erez & Somech, 1996). Another implication is that leaders might find it easier to motivate members with high collectivistic values, given collectivistic members likely react more positively to discretionary and ambient inputs directed at motivating members to contribute to team processes and outcomes. In contrast, members high on power distance tend to be submissive and avoid disagreement, which may lead them to be less motivated in teams, given employees working in teams are often empowered to self-manage and “think outside the box” (Kirkman & Rosen, 1999). In support, a study by Kirkman, Chen, Chen, and Lowe (2006b) found that group members with higher collectivism and lower power distance reacted more positively to transformational leaders, who tend to empower their members (cf. Kark et al., 2003).

Interestingly, cultural values may themselves serve as either ambient or discretionary inputs in teams. On the one hand, when teams are composed of individuals with similar cultural backgrounds (e.g., when all members are from the Midwest United States, or from the Szechuan province in China), cultural values may be fairly homogenous and therefore serve as ambient input shared by members. On the other hand, in more diverse teams, such as multinational teams, members may hold quite different cultural values, and hence such values may serve as discretionary inputs. As such, future research should examine the impact of cultural values on both individual and team motivation. Research should also test the potential main effects of cultural values on motivational variables, as well as their possible moderating effects on the influences of various ambient and discretionary inputs.

Adding to the complexity of studying multinational teams is the fact many such teams often rely on virtual modes of communication, such as e-mail and videoconferencing (cf. Kirkman & Mathieu, 2005). The level of a team’s virtuality may affect the level of motivation in teams by moderating the traditional input-process-output (IPO) models of team effectiveness. For instance, Kirkman, Rosen, Tesluk, and Gibson (2004) showed that team virtuality moderated the relationship between team empowerment and team performance such that the relationship was stronger when the teams were higher on virtuality. However, whether or not cultural differences in teams become more or less difficult to bridge as team virtuality increases is an important, yet largely unanswered question. More broadly, integrating theories of culture, teams, and motivation is clearly an important avenue for future work.

Conclusion

Teams have become prevalent in work organizations, and their prevalence is unlikely to diminish in the future. Quite to the contrary, we are likely to experience even more complex forms of teams, such as multiteam systems and other complex social networks (e.g., Mathieu, Marks, & Zaccaro, 2001). As we reviewed in this chapter, teams influence individual work motivation in profound and numerous ways. Although there has been a rich tradition of studying social influences of groups on individuals, researchers have only recently begun to integrate the teams and motivation literatures, and study more specific ways in which team-level factors affect specific individual motivational constructs. Moreover, there is an effort under way to generalize individual-level models of motivation to the team level and, in doing so, shed new light on team-level phenomena. Our main goal in this chapter was to facilitate more explicit integration of the teams and motivation literatures by providing a guiding framework, as well as a specific, forward-looking research agenda for the study of motivation in and of teams.

We submit that theorizing and research should address three fundamental questions pertaining to motivation in and of teams. First, we should continue to entertain the question of whether, or perhaps more importantly *when*, individual-level motivational constructs and processes generalize to the team level. Although we presented ample evidence that motivational constructs can generalize to the team level, it remains to be seen whether such constructs are more likely to generalize in certain situations than others. For example, we suspect that the concept of team efficacy may become more similar (in its meaning and function) to self-efficacy later on, as opposed to early on, during a team's life span, after members have gathered shared experiences on which to base their collective efficacy judgments.

A second important avenue for future research involves the cross-level interplay between individual and team motivation. In particular, we need to gain better understanding of how, why, and when individual-level motivational constructs and processes aggregate to impact team-level motivational constructs and processes and, moreover, when contextual influences of team motivation on individual motivation are most potent. A third area for further research involves the need to delineate more sophisticated, multilevel models of motivation. Beyond considering multilevel relationships within the motivation system itself, such models should explicitly consider the various individual-level, group-level, and organizational-level antecedents that combine to influence individual and team motivation.

Ultimately, we believe such research would lead to substantially richer understanding of the various personal, interpersonal, and contextual fac-

tors that drive effective functioning of individuals and teams in work organizations. Furthermore, addressing these three broad areas, as well as the more specific avenues we identified in this chapter, would help develop more powerful theories of motivation that transcend the individual, as well as consider the multitude of contextual forces that impact individual work motivation.

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