

The Future of Motivation in and of Teams

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Keywords

teams, groups, motivation, goals, self-regulation

Abstract

The study of motivation in and of teams has flourished and expanded over the past few decades. We now have a better understanding of core motivational processes at the individual and team levels of analysis, along with cross-level processes through which individuals and teams influence each other. However, societal, cultural, economic, and technological changes have led to new forms of team-based designs and teaming strategies in work organizations. In this article we review five major changes to the nature of teams and teaming and identify fruitful avenues for future research that can generate new and important knowledge about the motivation of individuals in teams as well as the motivation of team systems as wholes.

INTRODUCTION

Employee motivation at work is one of the most widely studied topics in the fields of organizational psychology and organizational behavior (e.g., Deci et al. 2017, Kanfer & Chen 2016, Kanfer et al. 2017, Kozlowski et al. 2017, Locke & Latham 2002). Historically, research on work motivation has largely focused on the individual employee. However, over the past several decades, there has been growing recognition that employee motivation is not just an individual-level phenomenon; rather, individuals' motivation-related experiences and behaviors are a product of both the individual and the social (e.g., organizational teams, culture, and climate) and technical (e.g., job design, human capital management systems) environment within which the individual resides (e.g., Bandura 1997, Chen & Kanfer 2006, Kanfer et al. 2008). Arguably, the most proximal and impactful context influencing employee motivation and behavior is the team within which employees often work. Indeed, work teams typically provide both the cues and consequences for a team member's behavior, as well as exerting many other social- and technical-based influences that manifest in work organizations (e.g., Kozlowski & Bell 2013, Kozlowski & Ilgen 2006, Mathieu et al. 2019).

Team-based structures in work organizations are ubiquitous. During the second half of the twentieth century, scientific advances and organizational goals fueled a steady increase in the use of teams. As we enter the twenty-first century, teams not only have morphed into a wide array of different types (e.g., project, production, management, action) but now perform across geographies and increasingly in service of complex goals that can be accomplished only through the coordinated contributions of multiple teams (Mathieu et al. 2019, Zaccaro et al. 2020). Along with the growing reliance of organizations on teams has also come the need to understand individual employee motivation in the context of new team structures (i.e., motivation in teams), as well as the motivation of team systems as wholes (i.e., motivation of teams) (Chen & Kanfer 2006). As reviews of the literatures on work teams (e.g., Kozlowski & Bell 2013; Mathieu et al. 2017, 2019) and work motivation (e.g., Kanfer & Chen 2016, Kanfer et al. 2017) suggest, substantial progress has been made in understanding motivation in and of teams. And yet, changes and innovations in the nature of routines used in the workplace have had a significant impact on the structure and dynamics of work-related teams, which necessitates a fresh look at the role of motivational processes in and of twenty-first century work teams. Accordingly, our purpose is to delineate a forward-looking agenda for theorizing and research that integrates recent advances in the often-disparate work teams and employee motivation literatures.

For our purpose, and in line with the literature, we refer to work motivation broadly as human-centric mechanisms and processes that drive the development, adoption, and pursuit of work goals (Kanfer & Chen 2016, Kanfer et al. 2017). Specifically, work motivation has been defined as “a psychological process that influences how personal effort and resources are allocated to actions pertaining to work, including the direction, intensity, and persistence of these actions” (Kanfer et al. 2008, p. 5). This perspective posits two core goal processes underlying work motivation: (a) goal choice (i.e., the generation of work-related goals and strategies to accomplish these goals) and (b) goal striving (i.e., the initiation, persistence, and modulation of effort allocation in pursuit of goals). In addition, goal choice and goal-striving processes are influenced by proximal motivational states (i.e., individual cognitions regarding the task environment, such as how interested they are in pursuing the tasks, affective reactions to events, and whether they feel capable of handling the task environment well), as well as by more distal (less direct) individual differences and contextual features. Given there are strong causal relationships among motivational states, goal choice, and goal striving, we include indicators of all three concepts when reviewing research on team motivation at work.

In line with the extant literature, we also consider a broad definition of work teams as two or more employees who work together, with at least some level of task interdependence, toward common objectives (see Kozlowski & Ilgen 2006). However, we consider multiple forms of teams, including more temporary and simultaneous team membership that may challenge some aspects of the traditional definition of teams. For example, it is now quite common for employees to work on multiple teams at the same time (O’Leary et al. 2011); to work on teams composed of employees that are distributed across time and locations (Fiol & O’Connor 2005); and to rely on and coordinate their behavior with embedded technologies, including artificial intelligence (AI) algorithms (Larson & DeChurch 2020). It is also increasingly common for teams to be part of larger and more complex multiteam systems (MTSs) (Zaccaro et al. 2020). In such new team structures, motivational processes may be different, in part since strong and clear team boundaries and shared identity are less clear-cut (O’Leary et al. 2011). In addition, it is important to note that we use the term *teaming* to reflect the notion that—beyond their work in a formal home-base team—employees now also collaborate with others at work more organically outside formal team-based structures and across multiple teams (Edmondson 2012). As Edmondson & Harvey (2018) note, cross-boundary teaming can increase team member knowledge and contribute to team innovation. Thus, we consider motivation in the context of both more traditional teams and these new forms of teams and teaming.

We next summarize a comprehensive theoretical model for studying motivation in and of teams developed by Chen & Kanfer (2006), which has built on and integrated several prior frameworks of both motivation and teams. We chose Chen and Kanfer’s model because it includes core components of motivation (i.e., motivational states and goal-based processes) and captures motivation of individuals in teams, motivation of teams as wholes, and the interconnectedness between teams and individual motivation. We briefly summarize research in support of Chen and Kanfer’s comprehensive model and explain how this model provides a uniquely useful starting point for the assessment and evaluation of new developments in research on new team forms and teaming in terms of motivation in and of teams. We then identify and discuss three key developments in work-related teams, namely (*a*) complex team forms and new forms of teaming, (*b*) teamwork across space and place, and (*c*) teams that include both human and AI-based agents. In each of these areas, we consider likely implications for both employee and team motivation and delineate specific research needs to advance new knowledge on the role of motivation in and of teams. We conclude with a broader discussion of new directions for research on motivation in and of teams. Thus, we seek to develop new insights into the study of motivation in the context of twenty-first century teams.

MOTIVATION IN AND OF TEAMS: A FRAMEWORK

As the use of work teams proliferated during the 1980s, organizational scholars expanded the scope of work motivation theory to include the impact of team processes and mechanisms on both individual and team-level work motivation. One of the first important advances in this expansion pertained to providing evidence for the homologous nature of efficacy judgments at the individual and team level. For example, Bandura (1997) pointed out that self-efficacy (a belief about one’s capability to perform particular tasks) is a cognition that can be held by both individuals and collectives (such as teams, capturing team efficacy) and hence can motivate both individual and collective actions. Building on this perspective, teams, like individuals, can be poised to collectively select goals that direct and sustain effort toward team goals (e.g., O’Leary-Kelly et al. 1994). Although this initial work on the homologous nature of key motivational concepts was largely successful (e.g., Gully et al. 2002), relatively less attention was focused on understanding the complex interplay between individual and team motivation.

Building on earlier research on motivation in and of teams, Chen & Kanfer (2006) developed an integrative multilevel theoretical model based on a systems perspective “that emphasizes the patterns of exchange between the individual and the collective, as well as the relationships between the individual and the team with the contextual environment” (Chen & Kanfer 2006, p. 239). Their multilevel model focused on providing a more precise explanation of the dynamic interplay between individual-level motivation in teams and collective motivation of teams as whole systems. In line with a systems perspective, Chen and Kanfer posited a dynamic between levels such that, on average, the influence of team motivation on individual motivation would be more immediate and pronounced than that of individual motivation on team motivation. As a function of time and/or team development, however, they suggested that individual motivation may emerge and exert important influence on team motivation, particularly in situations that afford members more opportunities to influence the team (e.g., in early, less well-defined stages of team development and/or in crisis situations requiring unique individual inputs for collective success).

Chen & Kanfer’s (2006) theoretical model of motivation in and of teams delineated three main sets of propositions, each of which has received some empirical support in the literature. First, the model defined collective motivation as captured by functionally similar components to individual-level motivation, most prominently in terms of distinct motivational states held at both the individual and team levels (e.g., individual and team efficacy beliefs, individual and team sense of empowerment), individual and team goal choice (i.e., individual and collective team goals and strategies for accomplishing the goals), and individual and team goal striving (i.e., the regulation of personal and collective action in pursuit of individual and team goals, respectively). In support, there is evidence that team motivational states, such as team efficacy (Gully et al. 2002) and team sense of empowerment (Seibert et al. 2011), positively relate to team performance, similarly to how their individual-level counterparts (self-efficacy and psychological empowerment, respectively) positively relate to individual performance. Furthermore, Chen & Kanfer (2006) and Marks et al. (2001) summarized evidence for the conceptually and functionally similar roles of team-level goal choice and goal striving (captured by what Marks et al. coined as transition and action processes, respectively) to individual goal choice and goal striving. In particular, similar to individual-level research on motivational processes and performance, there is evidence that team goal choice and goal-striving processes relate more proximally and strongly to team performance than to team motivational states and other inputs (Chen et al. 2005, DeShon et al. 2004, LePine et al. 2008).

Second, team and individual motivation are posited to be causally related and to exert non-trivial influences on each other (e.g., individuals allocate personal goal-directed effort in part as a function of their own motivational states and in part due to their team’s motivational state; individual effort allocation along with collective effort allocation combine to influence team performance). Indeed, findings by Chen et al. (2007), Gully et al. (2002), and Seibert et al. (2011) showed that individual-level motivational states and processes are positively related to parallel motivational states at the team level. In addition, there is evidence that individual performance in teams is uniquely driven by both individual-level motivation (e.g., by self-efficacy and goal-related processes) and team-level motivation (e.g., by team efficacy and team-level goal processes) (Chen et al. 2007, 2009). Furthermore, Chen et al. (2007) and D’Innocenzo et al. (2016) also found that team empowerment (a team motivational state) moderated the influence of individual-level psychological empowerment on individual performance in teams.

The third set of theory-driven propositions advanced by Chen & Kanfer (2006) pertains to the roles of inputs impacting the team motivation system. Building on Hackman (1992), Chen and Kanfer distinguished between discretionary inputs (i.e., inputs directed at some but not necessarily all individual members, such as leader actions directed at specific members of the team) and

ambient inputs (i.e., inputs directed at the team, such as leader actions directed at the team as a whole) in teams. Chen & Kanfer (2006) argued that discretionary inputs would be more likely to directly influence individual motivation, whereas ambient inputs would be more likely to directly influence team motivation. In support, there is evidence that prior team performance influences team efficacy more strongly than it does self-efficacy and that prior individual performance influences self-efficacy more strongly than it does team efficacy (Chen et al. 2009, DeShon et al. 2004). There is also evidence that team-oriented leadership (such as an empowering leadership climate) promotes team empowerment, whereas individual-oriented leadership (such as dyadic leader–member relationships) promotes members’ psychological empowerment (Chen et al. 2007). However, there is also evidence for an asymmetry such that team-level inputs exert more direct influences on individual-level motivation than do individual-level inputs on team-level motivation (Chen et al. 2007, 2009). In addition, the two types of inputs might also interact (in substitutional or amplifying manners) to influence individual-level motivation. Specifically, team inputs, such as an empowering leadership climate, were shown to influence individual motivational states more when coupled with positive inputs [such as more trusting leader–member relationships (Chen et al. 2007)] than negative inputs [such as higher relationship conflict among members (Chen et al. 2011)].

In sum, Chen & Kanfer’s (2006) multilevel theoretical model of motivation, along with the prior research summarized above, provides a useful framework for studying motivation from a systems perspective that takes into account not only individual-level motivation (i.e., motivation in teams) but also motivation at the collective level (motivation of teams), as well as the interdynamic relationships that exist between individual and team motivation. As such, the framework highlights three core motivational concepts, namely, motivational states, goal-choice processes, and goal-striving processes, along with the principles that link these concepts within and across levels of analysis. As we discuss next, Chen and Kanfer’s model also provides a useful framework to continue the broadening study of motivation in and of teams—particularly when incorporating new realities of the workplace in terms of team structures and teaming.

THE FUTURE OF TEAM MOTIVATION RESEARCH

Theorizing and research through much of the twentieth century focused on employee motivation in teams, with relatively less attention paid to the multilevel influences between individual and team motivation or newly emerging team and teaming forms. Historically, employees were typically assumed to belong to a single work team, and it was assumed that the team was managed by a formal leader or the employing organization and that the team had clear membership boundaries and goals (cf. Kozlowski & Bell 2013; Mathieu et al. 2017, 2019). In contrast, the rapidly changing nature of teams and teaming in work organizations over the past few decades has raised a host of new questions about the multiple mechanisms and processes by which team member and team-level motivation might wax and wane.

Over the past two decades especially, we have experienced workplace changes that have dramatically affected organizational goals, work roles, and work routines. In particular, the growing complexity of team-based objectives and the impact of the COVID-19 pandemic, along with globalization and technological innovations, have led to new forms of teams and teaming. As such, we address the implications associated with the accelerating implementation of powerful new technologies in the workplace, such as ChatGPT, Zoom, and other technologies that can modify team member resources, work roles, and work routines, as well as associated psychological states, such as employee engagement, and interpersonal collaborations. We also consider the disruptive impact of the COVID-19 pandemic on teamwork and the pronounced changes in

workforce diversity that continue to reshape the very nature of teams and teaming—and by extension the multitude of contextual (social and technical) influences on employee and collective team motivation in organizations (e.g., Mathieu et al. 2017).

Moreover, we consider how technological, societal, and organizational changes over the past two decades have influenced employee and organizational attitudes and structures with respect to motivation in and of teams. These changes have been proposed to affect work motivation at a global level (e.g., greater interest in personal well-being) and in virtual teams (e.g., Handke et al. 2020) and to carry possible differential effects for different segments of the workforce [e.g., aging workers (Kanfer & Ackerman 2004)]. However, to date, there have been few systematic studies of how these changes operate to affect the motivational mechanisms that underlie motivation in and of teams.

Accordingly, in the next section we focus on the implications of two relatively widely recognized changes to the nature of work during the twenty-first century: (a) changes associated with less well-defined team boundaries brought about by changes in organizational structures and work design and (b) workplace changes that have had a profound impact on psychological processes that form the foundation of employee and team work identity—that is, what is and is not considered a team and the key features of social entities and their dynamics that may affect how employees construct and modify their work identity.

Thus, the confluence of workplace, technological, and sociocultural changes opens important opportunities for advancing new knowledge about motivational processes in team-related contexts. Building on new developments in the literature on work and organizational teams, we organize the following section into three interrelated themes: (a) the role of evolving team structures characterized by complex team forms and new forms of teaming (i.e., MTS, multiple team membership, and self-managed and self-formed teams), (b) the impact of team designs taking place across place and space, and (c) the development of human–AI teams and collaborations. As we review these themes, we point out how these new workplace realities necessitate greater attention to motivational processes across the individual and team levels. As such, we identify particularly promising new research directions, anchored in the multilevel framework of team motivation (Chen & Kanfer 2006), which we discussed in the previous section titled *Motivation in and of Teams: A Framework*.

Evolving Team Structures: Complex Team Forms and New Forms of Teaming

We next identify five new forms of teams or teaming and discuss their influences on motivation based on extant research: (a) MTSSs, (b) multiple team memberships, (c) self-managed and self-formed teams, (d) teamwork across place and space, and (e) human–AI teams. These new forms and their potential implications for motivation in and of teams are summarized in **Table 1**. Note that we recognize that additional and more precise motivation implications will likely emerge with more research on motivation in each new form of teams and teaming.

Multiteam systems. One form of teaming that has become increasingly popular is the MTS, defined as “two or more teams that interface directly and interdependently in response to environmental contingencies toward the accomplishment of collective goals” (Mathieu et al. 2001, p. 290). MTSSs are especially prevalent in military and security services, legal, disaster response, space exploration, and medical settings (Shuffler & Carter 2018), where the organizational goal entails coordinated contributions from teams with different roles and whose members possess different areas of goal-related expertise. With commercial space exploration on the rise, along with the increasing need to respond rapidly to climate-related disasters and new pandemics, the prevalence of MTSSs has increased as well. For example, natural disasters such as wildfires,

Table 1 Motivation implications of new forms of teams and teaming

New form of teams/teaming	Implications for motivation in and of teams
MTSs	<ul style="list-style-type: none"> ■ Antecedents and outcomes of motivation reside at the between-team and MTS levels, in addition to the individual and team levels ■ Goals and effort toward goals need to be coordinated across individuals, component teams, and the MTS as a whole ■ Individuals' motivated actions can impact not only their respective component team but also the larger MTS system
Multiple team memberships	<ul style="list-style-type: none"> ■ Individuals need to form goals and strive toward their own goals across multiple teams, all of which have their own goals ■ Contextual antecedents of employee motivation emanate from different teams employees work on ■ Employees' career goals impact and are influenced by motivational processes for each specific team employees work on
Self-managed and self-formed teams	<ul style="list-style-type: none"> ■ Founders' personal goals and motivational attributes have a greater impact on the team's goals and composition, relative to individual motivation in exogenously formed teams ■ Team-level motivational constructs may take time to evolve following the team's formation
Teamwork across place and space	<ul style="list-style-type: none"> ■ Team identity and trust are more difficult to build, yet they play a more important role in motivating distributed than colocated teams ■ Nonwork influences have greater effects on employee and team motivation in distributed than colocated teams ■ Cultural differences have greater influences on employee and team motivation in globally distributed than colocated teams
Human–AI teams	<ul style="list-style-type: none"> ■ Employees need to coordinate goals and goal pursuit with other humans as well as AI functions on the team ■ Employees need to be motivated to collaborate with AI functions ■ AI can enable employees and teams to pursue more challenging goals and to do so more efficiently

Abbreviations: AI, artificial intelligence; MTS, multiteam system.

floods, major storms, and earthquakes across the globe have required coordinated responses from multiple agencies from different jurisdictions, each with multiple teams that coordinated the response effort.

As organizations and their products become more complex, an individual's work motivation can likewise be expected to be increasingly a function of not just their primary work team but also a function of related teams and higher-order MTS goals. An important unique feature of MTSs is that they require more coordination not only within teams but also across component teams. This means employees face greater dependencies and interaction with other MTS individuals outside their immediate focal teams. This also means that employees may need to align their personal goals not only within their teams but as a part of larger and more complex systems of teams (for a review, see Zaccaro et al. 2020). Likewise, individuals working within an MTS may hold multiple work identities. For example, a firefighting team may identify not just with their respective focal team but also with MTS-level goals related to reducing the negative impact of global climate change.

The MTS context has several unique implications for the study of work motivation. First, as discussed previously, key motivational concepts (such as shared motivational states and goal-related processes) now can also reside at the MTS level. For example, as reviewed by Zaccaro et al. (2020), the generation and alignment of goals, along with goal-striving processes such as the collective pursuit of goals, requires members of MTSs to coordinate their collective efforts

within teams, between teams, and at the level of the larger system. Thus, descriptively, in MTSs, motivational concepts reside and function at two more levels of analysis—the dyadic between-team level and the MTS level. As such, there is a need to expand the study of motivational constructs and processes beyond the individual and team levels. For instance, the concepts of goal choice and goal striving may well be meaningful and useful as alignments of goal plans and processes capturing coordination alignments at the between-teams and the MTS levels.

A second related implication of the MTS context pertains to the expanded opportunity for cross-level and cross-boundary relationships involving motivation. Depending on the structure and coordination of teams within the MTS, motivation within and across teams, as well as motivation to accomplish MTS goals, may substantially change as a function of cross-boundary interactions at the team or MTS level. As a consequence, individuals and teams may coordinate their goals quite effectively in each component team, but their ability to allocate effort effectively and perform well may be hampered due to lack of between-team coordination (see Davison et al. 2012, Marks et al. 2005). In addition, as noted by Zaccaro et al. (2020), relative to the respective component team, the influence of between-team and MTS-level motivation on each individual member's motivation may be greater when individual members more regularly interact with—and rely on—members from other component teams. An important question for future research pertains to whether individual motivation aggregates to impact MTS outcomes as a function of the extent to which members of one component team interact with members of other component teams in the same MTS. The heightened complexity of the MTS context also suggests that individual motivational states and behaviors take longer to emerge and impact the MTS as a whole in a meaningful way. On the other hand, individuals who hold critical boundary-spanning roles across teams might exert greater impact on MTS-level outcomes than team members who do not interact with members of other teams in the MTS. Thus, there is a need to study cross-level models of motivation that transcend the individual and team levels and also to consider the between-team and MTS levels of analysis.

Third, as suggested above, a key difference between studying motivation in single teams versus an MTS relates to the added complexity of the MTS context with respect to aligning goals within and across hierarchies. Specifically, for an MTS to be most effective, goals need to be aligned such that each component of the system (individual, team, between-team, and MTS) specifies goals and strategies that are not in direct conflict but rather operate to direct effort toward coordinated actions that support system priorities and objectives. Likewise, inputs affecting individuals, component teams, and the system likely impact each part of the system, requiring a coordinated response.

Thus, our analysis suggests that goal alignment processes play a more important role in the more complex MTS than in single-team contexts. However, it is unclear what features of goal alignment are most powerful in driving motivational states at each level of analysis. In the context of healthcare, for example, there is typically broad agreement on the objective of providing effective patient care. Yet, failure to align goals among multidisciplinary teams in terms of timing might result in piecemeal care practices that do not support the broader MTS goal. Similarly, differential emphases on MTS-level goals among component teams might influence team members to implement different allocations of attention and effort across activities. In addition, relatively little is known about how the nature of MTS goals might affect team-level boundaries, employee identity, and/or work engagement.

Multiple team membership. During most of the twentieth century, most employees identified with a single team, such as a production team or a marketing team, with one formal leader and one set of team norms regarding behavior. Increasingly, however, employees in the twenty-first century identify as members of multiple teams. An oncologist working in a hospital, for example,

may identify themselves as an oncologist, a member of the hospital physician team, a member of the hospital system, and/or a member of multidisciplinary project teams such as tumor board and patient safety review teams, with each team often directed by different team leaders. Multiple team membership designs are especially popular in organizations that rely on highly skilled knowledge workers, where organizations aim to maximize learning, coordination, and innovation and more effectively utilize employee talent across teams (O'Leary et al. 2011).

Employees working in multiple teams need to not only manage their role in each team but also learn to work with different teammates and leaders across teams and to self-manage their own effort across teams (Chen et al. 2019). Although multiple team membership appears to be a useful strategy for utilizing employee talent, relatively little is known about the determinants and processes by which employees allocate their attention and actions across team goals or the events and dynamics that lead to changes in team membership priorities. A nascent body of research has emerged on the features of the team that may promote employee motivation (e.g., Chen et al. 2019, Rapp & Mathieu 2019), but it remains unclear what employee characteristics may promote or dampen employee motivation for new learning and knowledge sharing across teams.

To date, research findings on the motivational impact of multiple team membership have shown that working in a greater number of teams can be a double-edged sword. On the one hand, multiple team membership can enhance employee stress and role overload (Pluut et al. 2014, Zika-Viktorsson et al. 2006), thereby reducing employee motivation. At the same time, however, there is also evidence that leaders can positively promote employee motivation and performance beyond the realm of one team [e.g., by empowering leadership toward the team and/or each individual member (Chen et al. 2019)] and that employee motivation and performance in each team is positively influenced by focal team features such as team cohesion and project prestige (Rapp & Mathieu 2019).

The reality posed by working on multiple teams simultaneously has important implications for the study of team motivation. First, there is a need to better understand how employees formulate and align goals among the multiple teams in which they are a member, as well as the strategies employees use to regulate their effort toward accomplishing multiple goals across teams. While navigating one's effort across teams shares similarities to managing effort across multiple goal pursuit (for a review, see Neal et al. 2017), teams add important social elements that have been largely neglected in prior multiple goals research. For example, the need to align goals across multiple teams and with more members across teams can enhance the likelihood of goal conflicts. In addition, social influences emanating from interactions with different leaders and teammates across teams can enhance as well as reduce motivation across teams and provide resources that facilitate goal pursuit or demands that harm goal pursuit. These gaps suggest that more research that integrates between the multiple team membership motivation and the multiple goal pursuit literatures may provide important new insights into work motivation in and of teams.

Second, participation in multiple teams also provides employees with unique career opportunities, due to interactions with more coworkers, organizational leaders, and customers (cf. O'Leary et al. 2011). This suggests that consideration of different time scales is also important (for similar calls, see also Kanfer et al. 2008). Specifically, we need a better understanding of what motivates employees working on multiple teams not only on daily, weekly, and project-based time scales but also across longer career time scales. For example, career goals may explain why employees may be more or less motivated to ask to join some teams over others and why they would choose to invest more time on a daily basis in some project teams than others (e.g., based on the extent to which specific teams provide them more face time with important decision makers in the organization or with customers in other companies they may wish to work at). Thus, integration between the team motivation and career literatures is also important.

In addition, we also need to better understand positive and negative contextual influences on employee motivation within and across teams. For example, there is evidence in single-team research that alignment of positive contextual influences (such as motivating leadership practices) significantly contributes to employee motivation (Chen et al. 2007, D’Innocenzo et al. 2016) and that negative team stimuli (such as conflict) can reduce the beneficial motivation effects of positive contextual influences in the team (Chen et al. 2011). How might such dynamics impact employee motivation across teams? In one study, Chen et al. (2019) found that employees working on multiple teams can remain motivated when working with a highly empowering leader on one team, even if they are facing a micromanaging (low empowering) leader on other teams. However, we need more research to better understand the complex dynamics involving multiple positive and negative contextual influences that can impact employee motivation across multiple teams.

Self-managed and self-formed teams. The opportunity for autonomy in the performance of one’s work tasks has long been recognized as a key determinant of intrinsic work motivation (e.g., Hackman & Oldham 1976). Theory and research findings from the job design literature provide empirical support for this notion (see Parker et al. 2017). Beginning in the 1990s, the notion of autonomy was extended to take into account the impact of self-managed forms of teams (e.g., Kirkman & Shapiro 1997, Manz & Sims 1993). In a related vein, there is ample evidence that sharing leadership functions among team members results in more positive member motivation and enhanced team effectiveness (D’Innocenzo et al. 2016, Wang et al. 2014). This line of research has shown that self-management in teams empowers (and hence motivates) members toward greater team engagement (see also Seibert et al. 2011).

More recently, team researchers have further extended the notion of autonomy to team assembly. Most extant team research has examined teams where a key aspect of self-management—i.e., the formation of the team and selection of initial members—has not been done by members of the team. An emerging line of research, with important motivational implications, has begun to examine the formation of entrepreneurial teams (Knight et al. 2020), whereby cofounders endogenously and organically form new teams to start a new venture. Research has shown that cofounders seek partners who are interpersonally compatible and/or who offer unique and complementary skills to the new venture (Lazar et al. 2020, 2022). Unfortunately, to date, not much is known about the role of motivation processes in new venture teams—in part because the majority of research on the formation and operations of new venture teams has been conducted from an economics rather than psychological lens (Lazar et al. 2020). Still, the broader entrepreneurship literature has shown that motivational constructs, including self-efficacy, goals, and identification, and personal initiative play important roles in the success of individual entrepreneurs (e.g., Baum & Locke 2004, Campos et al. 2017, Frese et al. 2007).

There is also a nascent literature on motivation in self-assembled teams in other contexts. Using a social network perspective, DeChurch, Contractor, and their colleagues have conducted several studies on the processes and impacts of self-assembly in the science domain (Ichhaporia et al. 2020, Kaven et al. 2021) and have proposed a taxonomy of team self-assembly systems based on how individuals use technologies to form teams (Gómez-Zarà et al. 2020). Research in this domain has also focused on project and gaming teams, where a new team member is selected by the extant team (e.g., Wax et al. 2017, Zhu et al. 2013). Findings to date show that members tend to select new members based on complementarity. However, less attention has focused on the effects of this strategy and technology use on team member motivation. Thus, the integration of the team motivation literature with the entrepreneurship literature and research on other types of endogenously formed work teams can help answer additional questions regarding team motivation. For example, how and when do team motivational states emerge in self-formed teams?

Given differences in the extent to which control and management of the team emanates more from outside or inside the team, do the same or different individual-focused and team-focused inputs affect team and member motivation in endogenously versus exogenously formed teams? And, when—and under which circumstances—might individual motivation most likely impact team outcomes in self-formed teams?

Teamwork Across Place and Space

The COVID-19 pandemic and the introduction of new technologies during the past decade have caused a sea change in thinking about the long-held notion that teams need to operate in a common space and place. To date, these global events and technological advances have had a powerful impact on the use of virtual teams and remote work routines. Although interest in remote work can be traced to research on telecommuting initiated in the 1970s (see Golden et al. 2006), virtual and remote work have moved from the sidelines to center stage as a result of the popularity of virtual teaming among employees (for reviews, see Gilson et al. 2015, Kirkman & Mathieu 2005). From an employee perspective, the advantages of virtual and hybrid/remote work (also known as work-from-anywhere arrangements) are typically described in terms of helping improve work–nonwork balance, allowing for greater work autonomy, and/or allowing employees to relocate to more affordable cities and places closer to family (see Choudhury et al. 2021, Golden 2021). Although a few studies have focused on the design conditions that facilitate more positive employee outcomes in remote work (e.g., Allen et al. 2020), there are also preliminary studies suggesting that remote working arrangements may increase job stress and reduce work motivation (e.g., Felstead & Henseke 2017).

To date, research on the trend toward detachment of work routines from a fixed place has focused largely on the impact such arrangements have on unit- or organizational-level outcomes. However, findings from disparate streams of research suggest that team member trust is a key factor in virtual team motivation. Although research has noted that trust among members is especially hard to develop in virtual teams, there is also evidence that distributed virtual teams (more so than colocated teams) benefit more from trust, in terms of improved functioning and effectiveness (Breuer et al. 2016). Similar findings have been noted in research on teams that are distributed globally (Gibson et al. 2014). The challenge of building trust in such teams is partially due to a lack of opportunities to engage in common interactions (face-to-face or even synchronous virtual interactions) and also due to communication challenges (Gibson et al. 2014). In a related vein, members of global and virtual teams often find it harder to develop a shared team identity or a sense of common purpose and a shared set of goals (Gibson et al. 2014). These challenges suggest a need to study further the question of whether virtual and global teams (relative to colocated teams) find it more difficult to develop shared motivational states, develop shared goals and strategies for executing goals, and coordinate collective effort effectively in pursuit of goals.

A second unresolved issue pertains to having to navigate work between in-office locations and home. Although technological advances (e.g., personally held devices) have made it easier to work from anywhere and anytime, such advances have also dramatically increased the work–nonwork interface and hence likely enhanced the impact of nonwork experiences (such as childcare, eldercare, and leisure experiences) on work experience and employee motivation (e.g., Halbesleben et al. 2009). This also means that team members' work–family conflict (or, rather, enrichment) likely influences team-related functions and phenomena (Bhave et al. 2010). Thus, as the boundaries between work and nonwork blur, so do influences on employee motivation outside the scope of one's team and organization. Thus, research that examines the role of nonwork influences is sorely needed to better understand in whom, when, and how remote work affects motivation in and of teams.

Third, in more distributed (virtual and/or hybrid) teams, especially ones that span multiple countries, cultural diversity across members increases. As reviewed by Chen & Kirkman (2024), differences in cultural values can shape employee motivation both directly and as moderators and across the individual and team levels. For example, research has shown that members with more collectivistic values (who value their memberships in social units more) are more motivated in team contexts (Chen et al. 2011) and that those with lower power distance values (who prefer flatter organizational hierarchies) respond more positively to motivating (transformational) leadership behaviors (Kirkman et al. 2009). Similar effects for collectivism and power distance were also detected at the team level (e.g., Schaubroeck et al. 2007). However, there remains a lack of systematic integration between the study of cultural differences and that of motivation in and of teams (cf. Chen & Kirkman 2024). Therefore, another implication of the reliance on more virtual and hybrid teams is the need to better understand cultural influences on motivation processes in globally distributed teams.

Human–AI Teams

Throughout the history of humanity, technological changes have had profound influences on the nature of individuals' lives, working experiences, and the nature of teams and work routines in teams (Mathieu et al. 2017, 2019). With rapid advances in computing and information technology—and especially developments in AI—organizations have increased the use of technological agents to assist in the performance of routinized work activities and complex decision-making tasks that have historically required human intelligence. According to Larson & DeChurch (2020), over the past few decades, technological and computing innovation have progressed from merely providing a context that impacts teams, to providing tools that enable teamwork (e.g., virtual teams), to increasingly incorporating AI as a teammate [see also a recent report by the National Academies of Sciences, Engineering, and Medicine (2022)]. For example, human teams now partner with AI to make medical diagnosis decisions (e.g., Jussupow et al. 2021) and engage in various other emergency, production, and military tasks, among others (see O'Neill et al. 2022).

Theory and research on the impact of human–AI teaming is in its infancy. To date, much of the research on AI–human teaming has focused on what factors enhance humans' trust in the use of AI agents (e.g., Allen & Choudhury 2022, Dietvorst et al. 2015, Jussupow et al. 2021). Although human uses of AI have been shown to be quite valuable in enhancing individual and team performance across task domains and contexts (O'Neill et al. 2022), the shift toward employee attitudes that view AI agents as teammates (Larson & DeChurch 2020) requires rethinking the integration of artificial and human agents, with profound implications for teamwork. For example, AI-based tools have long been used to aid humans in complex decision-making that typically involves the simultaneous consideration of multiple factors, such as occurs in personnel selection. The new generation of AI, with capabilities for learning and the identification of efficient decision-making algorithms based on analysis of big data, moves AI away from the notion of it acting as a tool and closer to the notion that such agents work interactively with humans to accomplish complex individual-level goals (e.g., learning), team outcomes (e.g., coordination and communication), and organizational goals (e.g., profit and growth). From a motivational perspective, the continuing penetration of AI agents raises new questions about the selection of ideal team members (e.g., ones who can collaborate with AI functions effectively), team-related role assignments and training (e.g., learning how best to interact with humans as well as AI teammates), and what is required by leaders of the team [e.g., facilitating mutual coordination between human and AI agents (Larson & DeChurch 2020)].

Thus, the introduction of AI has important implications for the study of motivation in and of teams. First, going beyond prior research, there is a need to examine further what motivates teams and their members to adopt and rely on AI applications. For example, members may be more motivated to use AI to the extent to which AI applications can provide useful and efficient information affecting goal choice and goal-striving processes (e.g., helping with patient diagnosis, combining complex and diverse information when making financial planning decisions) and hence enable teams to generate more effective goals and strategies for accomplishing goals and to regulate their effort toward goal accomplishment. In addition, in line with the concept of means efficacy (Eden 2001), teams and their members may feel more confident and motivated to pursue more challenging goals when they know their team has the added AI capabilities that can help promote their personal and collective performance. On the other hand, motivation to work with agents may be hampered by employee concerns about agent bias based on the development of algorithms grounded in the analysis of prior biased data.

Second, AI can also be developed to help teams and their members regulate their effort in pursuit of goals more effectively. In particular, AI can be trained or developed to fit critical roles on teams (e.g., ones involving information gathering and integration and ones involving intrateam and interteam communication), hence directly facilitating goal generation and goal-striving processes. AI applications can also impact individual members' self-regulation effort, such as by enabling individual members to focus their attention in the right direction, assist members in communicating with each other, and more. Thus, there are ample research opportunities to learn more about not only why and when teams and their members can be motivated to adopt AI applications but also how and when AI can be adapted to facilitate motivation in and of teams.

Finally, and perhaps most critically, we need a better understanding of how best to integrate humans and AI into a coherent and motivated team system. For example, what is similar or different in how knowledge is shared and eventually emerges in human–AI teams, relative to human-only teams (cf. Grand et al. 2016)? How might individual and team goals get generated, implemented, and revised over time when the team involves both humans and AI agents? The extent to which AI and human agents can actively infer each other's beliefs and state of mind in a manner characteristic of how human teams interact and collaborate remains largely unknown. However, it has been suggested that Theory of Mind (ToM) is a critical concept for facilitating our understanding of how AI can adapt to and be better integrated with humans (e.g., Aru et al. 2023). ToM is a concept developed in child psychology to explain the metacognitive capacity (capturing one's intuitive understanding of others' feelings, beliefs, and intentions) that enables children to predict the behavior of others in social situations (e.g., Wellman 2014). Likewise, a proper ToM—or at least a shared set of shortcuts derived through big-data analytics that mimic the function of ToM—may enable AI and human agents to work and interact with each other more seamlessly (Aru et al. 2023). Although the mechanisms through which a collaborative human–AI ToM is created are not yet fully determined, the development of a common ToM between human team members and AI agents can be expected to enhance trust and promote human motivation (Williams et al. 2022).

DISCUSSION

Research on work motivation in and of teams has flourished over the past few decades. Findings during the latter part of the twentieth century have significantly enhanced our understanding of what motivates effective individual and collective performance in teams and the complex multi-level interplay that occurs between individual and team motivation. And yet, the introduction of new forms of teams and teaming in work organizations has raised a host of new questions and necessitates a second look at how motivation in and of teams occurs in the modern workplace. Our

Table 2 Directions for future research on motivation in and of teams

Research area	Research needs
MTSs	<ul style="list-style-type: none"> ■ Expand the study of motivational constructs and processes beyond the individual and team levels of analysis ■ Study cross-level models of motivation that also consider the between-team and MTS levels of analysis ■ Examine whether goal alignment processes within and across teams matter more in larger MTSs versus single teams
Multiple team memberships	<ul style="list-style-type: none"> ■ Integrate the teams and multiple goal pursuit literatures to better understand goal processes in multiple team membership contexts ■ Study career implications of employee motivation and behavior across multiple teams ■ Consider multiple positive and negative contextual influences on employee motivation across multiple teams
Self-managed and self-formed teams	<ul style="list-style-type: none"> ■ Examine how and when team motivational states emerge in self-formed teams ■ Compare the effects of individual-focused and team-focused inputs on motivation in endogenously versus exogenously formed teams ■ Study conditions under which individual motivation is most likely to impact team outcomes in self-formed teams
Teamwork across place and space	<ul style="list-style-type: none"> ■ Study how and when team motivational states may emerge in virtual and distributed teams ■ Examine the role of nonwork influences (i.e., life stages, family-related activities) on employee and team motivation ■ Study more complex cultural influences on motivation processes in globally distributed teams
Human–AI teams	<ul style="list-style-type: none"> ■ Examine what motivates teams and their members to adopt and rely on AI applications ■ Learn more about how and when AI can be adapted to facilitate motivation in and of teams ■ Study and develop additional insights into how best to integrate humans and AI into a coherent and motivated team system

Abbreviations: AI, artificial intelligence; MTS, multiteam system.

review reveals five new developments in the uses of organizational teams and teaming that have implications for the future study of motivation in these contexts. **Table 1** summarizes possible influences of five new forms of team structure and teaming on employee and work team motivation, and **Table 2** summarizes 15 promising directions for future research in these five team and teaming contexts, based on our review.

Theoretical Implications

Our review of the recent literature also reveals several important broader themes or trends with theoretical implications for research on teams and motivation. First, theory and research on motivation in and of teams remains relatively disjointed, with the focus of most studies on either the impact of team-level motivation on team-level and/or MTS outcomes or the impact of teaming structures on individual-level motivation. Consistent with the Chen & Kanfer (2006) model, we suggest that additional longitudinal, field-based, and experimental research is still needed to identify the conditions that promote or hinder cross-level impacts on employee and team motivation.

Second, although there is broad agreement that societal, economic, technological, and cultural factors can play an important role in motivation in and of teams, most research to date has not

focused on the mechanisms and conditions by which these presumably distal factors influence motivation. The radical changes in work routine brought about by the COVID-19 pandemic, along with continuing globalization, the growing demand for greater workforce diversity, and the introduction of AI technologies across industries and employment levels, suggest that distal factors may not be so distal after all; rather, their occurrence can directly spur innovations in new forms of teaming, including multiple team membership and hybrid and virtual teams distributed across the globe. With enhanced interest in complex problems worldwide (e.g., interplanetary space exploration, climate change), we have also witnessed greater reliance on more complex MTSs and other forms of teaming. These changes, along with the ability to work from anywhere, anytime, suggest that motivation in and of teams can be expected to increasingly be influenced by nonwork factors that transcend employees' careers and their employing organizations to include family and leisure experiences, political tensions at home and abroad, and more macrolevel economic conditions. These trends reinforce a call by Kanfer et al. (2008) to consider more complex, distal influences in content models of motivation, to include short-term and longer-term changes to individuals' experience at work, and to examine the broader and more complex context within which work is experienced.

Third, the increased diversity and complexity of individuals' work experiences in teams suggest that future research on motivation in and of teams necessitates a more interdisciplinary approach. For example, as noted earlier, the study of self-formed entrepreneurship teams has adopted not only psychological approaches but also economics and sociology lenses (Lazar et al. 2020). Similarly, recent findings suggest that the study of motivation in AI-human teaming requires the integration of areas as diverse as social intelligence, information systems, and computer science (e.g., Larson & DeChurch 2020, O'Neill et al. 2022). In addition, as the development of new forms of teaming raises employee concerns for personal well-being across work and nonwork spheres, future research on motivation in and of teams should take into account findings from other areas, including, for example, cultural psychology, health psychology, and political science. Thus, a more interdisciplinary approach that crosses between and integrates multiple levels of analysis is needed to advance greater understanding of motivation in twenty-first century teams (see also Mathieu & Chen 2011).

Fourth, in what might be viewed as irony, we argue that new teamwork realities noted in this article necessitate increased emphasis on understanding motivation in and of teams from a more person-centric perspective (e.g., Kanfer et al. 2017). Compared to teamwork throughout most of the twentieth century, employees engaged in teamwork now have the opportunity to craft unique and personalized work designs that afford opportunities to work with different teammates and leaders and coconstruct and modify individual, team, and organizational goals based on changing environmental conditions and information gleaned from others across unique patterns of multiple team memberships (cf. Parker et al. 2017). Furthermore, the inclusion of AI-based agents as collaborators rather than simply tools appears to critically depend on the development of an agent ToM that understands and can predict diverse person-specific thoughts and behaviors of humans in diverse team contexts.

Fifth, another crucial feature of teams with implications for motivation pertains to the blurring of team boundaries and the increasing dynamism across teams. Such trends make it less clear which members belong to a team on a longer versus temporary basis. The blurring of work-nonwork boundaries also places greater self-regulation challenges and stressors on individual employees and further reinforces the importance of studying individuals' psychological experiences and behaviors across complex team settings. Doing so will lead to a better understanding of employee motivation, beyond traditional models that have assumed more stable and well-defined team and work environments (cf. Mathieu et al. 2017, 2019).

Methodological Implications

The increasing complexity of studying motivation in and of teams noted above also poses new empirical challenges involving measurement and study design. For most of the twentieth century, measurement of team member motivation and motivation of the collective was achieved through self-reports of team members, often aggregated to capture team-level motivational constructs and processes (Chen & Kanfer 2006, Mathieu et al. 2017). Although such measurement approaches have strengths, such as capturing psychological and collective constructs in a content-valid manner, they also suffer from limitations such as a reduced ability to capture dynamic phenomena over time and more complex phenomena that transcend micro and macro levels.

Fortunately, the recent development of new measurement approaches helps address such empirical challenges and allows for the study of complex, dynamic, and time- and context-dependent motivational phenomena. One example includes the use of wearable Bluetooth sensors (Matusik et al. 2019), which can capture in real time the proximity of members to each other as well as network indices to include advice and friendship networks among members in teams. Computer-aided and machine learning text analysis methods have also been used to generate valid measurements of complex team processes that can be analyzed across time and locations (Leavitt et al. 2021, Mathieu et al. 2022). In addition, computational modeling has been employed to capture dynamic and complex emergent team processes, such as how and when collective and shared knowledge emerges in teams (Grand et al. 2016). Although none of these measurement developments are a panacea (i.e., each also carries limitations), these new tools can be integrated with more traditional study designs and measurement approaches to shed new light on more dynamic and complex team motivation phenomena across different time scales, locations, and other individual and contextual factors.

Practical Implications

Changes to work in teams also have important practical implications for employees and work organizations. For employees to be effective in today's new work team environments, they need to be socially and culturally adaptive as they learn to work with a greater variety of coworkers and leaders across multiple forms of teams and across geographic and cultural boundaries. Furthermore, employees need to learn how to self-regulate their effort more effectively as they navigate work across teams and units and transition more fluidly and rapidly between work and nonwork domains. Therefore, self-regulation and adaptability competencies are now more important than ever for employees to be effective across different forms of teams and teaming designs.

For organizations, new forms of teams and teaming can offer opportunities to utilize human talent more efficiently across projects, locations, and clients and to enhance information sharing and learning across units and locations (e.g., Edmonson 2012, O'Leary et al. 2011). For example, with technological innovations, organizations can now access more talent worldwide and rely on top talent to contribute across projects that span geographical locations. However, for organizations to reap such benefits, they need to develop systems that better integrate human capital management strategies (e.g., staffing, onboarding, performance management) with technological, societal, and cultural changes. For instance, firms now need to consider how well systems geared to identifying, developing, and managing current and new employees can fit diverse social and technical demands across projects and how to best utilize technology in enabling more effective teamwork.

CONCLUSION

The study of motivation in and of teams has become a topic of increasing importance for societies, organizations, teams, and the individuals who work in them, and this area of research has flourished

and expanded over the past few decades. Consistent with Mathieu et al. (2017), the importance of understanding teamwork and progress in the broader team literature has often occurred in tandem with—and as a result of—changes in the external environment in which societies, organizations, teams, and employees operate. Indeed, in this article we consider several salient (though by no means all) societal, cultural, economic, and technological changes that have affected the nature of motivation in and of teams. Our focus on new forms of team-based designs and teaming strategies in work organizations highlights the expanding scope and increasingly interdisciplinary approach of team motivation theory and research. We identify five major changes to the nature of teams and teaming and articulate several new and potentially fruitful avenues for future research that can generate new and important knowledge of motivation of individuals in teams as well as motivation of team systems as wholes. As we enter the second quarter of the twenty-first century, there are ample new opportunities to generate new knowledge about motivation in and of teams, with important practical implications for how best to assist work organizations, leaders, and employees in developing sustainable and mutually rewarding motivation in and of teams.

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Errata

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