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REVIEW ARTICLE

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Does team orientation matter? A state-of-the-science review, meta-analysis, and multilevel framework

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Summary

As teams are a foundational component of modern organizations, selection and training of employees to facilitate teamwork is of key importance. In this paper, we review and meta-analyze research on the construct of team orientation. We differentiate between organizational-, team-, and individual-level team orientation and discuss multilevel theory implications. A total of 39 articles comprising 210 effects were meta-analyzed. Results indicate that team orientation is important, particularly for effective teamwork and team-based outcomes. Specifically, at the overall level, we found significant and positive relationships with communication, coordination, cooperation, trust, shared mental models, backup behaviors, cohesion, innovation, satisfaction, leadership, and team performance. Team orientation was found to be negatively correlated with conflict. Interestingly, we found a negative relationship between team orientation and individual-level performance. We discuss the implications of these findings and make suggestions for future work to build upon these findings.

KEYWORDS
collective orientation, selection, team composition, teams

1 | INTRODUCTION

Teams are a foundational component of modern organizations, from knowledge production (Ahmadpoor & Jones, 2019) to safety critical operations (Salas et al., 2020). A team is defined as a group of individuals who are interdependent, embedded in a larger system, and who perform tasks that affect others (Guzzo & Dickson, 1996). These teams, often interdisciplinary and diverse in nature, manage tasks too complex for individuals or homogenous groups to solve alone (Borrego & Newswander, 209; Fiore, 2008; Vogel et al., 2012). Teams enable the organizational agility and resilience required to effectively and efficiently address organizational problems and improve financial performance (DeChurch & Mesmer-Magnus, 2010; Pulakos et al., 2019). Therefore, it is important to achieve a better understanding of how teams of people from various backgrounds can be optimally composed and trained to maximize effectiveness. As a result of the recognized importance of effective teamwork, researchers have sharpened their focus to identifying and capitalizing on the factors that influence team performance. Practitioners have followed suit, with over 55% of companies reporting significantly enhancing the focus of their performance criteria on teamwork and collaboration (CEB Corporate Leadership Council, 2014). Indeed, over the past two decades, teamwork and collaborative practices have increased across work domains (Cross et al., 2016).

One construct of interest with implications for team performance is *team orientation*. Team-oriented behaviors involve actions that enhance cooperation, such as working together, having high team standards for success, and sharing common goals (Watson, Johnson, & Merritt, 1998). There is some debate over the perceived importance of team orientation as a construct and even whether it is a desirable trait in certain contexts (e.g., Kaba et al., 2016); however, experts in team science continue to assert that team orientation is an essential element for team success (Salas et al., 2005; Tait, 1996) and it continues to be a focus of research supporting its importance.

1.1 | The importance of team orientation

Research shows that often, those who are most collaborative are also the organization's top performers (Cross et al., 2016) and since team-oriented behaviors involve actions that improve collaboration, it is hardly surprising that decades of research support the positive impact of team orientation on performance and other important organizational outcomes (Liu, 2006; Rahman et al., 2017; Rhee et al., 2017; Watson, Johnson, & Merritt, 1998). Research finds that innovative organizations have higher levels of collective orientation than less innovative companies (Saleh & Wang, 1993), which could mean that team orientation plays a role in creative problem-solving. Team-oriented individuals may be better able to solicit relevant knowledge from other team members and contribute to team-level knowledge to develop innovative solutions (Fiore et al., 2010). Indeed, past research indicates that teams with individuals high on team orientation perform more effectively at both the individual and team levels (Driskell & Salas, 1992; Eby & Dobbins, 1997; Jackson et al., 2006). Individuals with higher team orientation are also more likely to view their partner's input as valuable and useful (Driskell & Salas, 1992), more likely to engage in organizational citizenship behaviors (Jackson et al., 2006), and less likely to engage in counterproductive work behaviors (Jackson et al., 2006) and risky behavior (Berg et al., 2002).

In addition to enhancing cooperation and team problem-solving, previous research has also shown that team orientation may be associated with individual satisfaction, such that individuals higher on team orientation are more satisfied with working in teams (Miles, 2000) and experience lower perceptions of job stress (Pugliesi, 1999). Therefore, team members high on team orientation might be more satisfied with their work and possibly have higher tenure in their employment (i.e., reduced turnover; Tett & Meyer, 1993). Higher levels of team orientation may be especially relevant for teams with diverse individuals, as team orientation has been found to be essential for successful performance among diverse teams for problem-solving tasks (Watson, Johnson, Kumar, & Critelli, 1998; Watson, Johnson, & Merritt, 1998). This may be due to the construct neutralizing the effects that surface-level diversity (i.e., gender and race) can have on relationship conflict (Mohammed & Angell, 2004). Research also suggests that individuals in diverse teams need to have high team orientation to leverage the benefits of diversity and maintain performance over time (Watson, Johnson, Kumar, & Critelli, 1998; Watson, Johnson, & Merritt, 1998).

This evidence indicates that considering team orientation during employee selection procedures may be critical, particularly for job roles embedded in highly interdependent teams. In addition to selection implications, it may be possible to increase team orientation through training and development or other intervention efforts. If team orientation is malleable, then it might be possible to create the conditions that encourage its development (see Braithwaite et al., 2016). Team orientation is typically viewed as being relatively stable, but less stable than personality traits (Andres, 2006) and able to change over time through experience (Eby & Dobbins, 1997). Eby and Dobbins (1997) proposed that an individual's preference for working collectively may be due to self-efficacy for teamwork and positive past experience working in teams. Indeed, it has been suggested that team members must believe that their performance will be more successful through working as a team than working individually (Dippong, 2012). It may be possible to increase an employee's level of team orientation by providing positive group work experiences that positively influence their belief that teamwork will lead to task success.

Additionally, researchers have posited that teams who receive group feedback as opposed to individual feedback may increase team orientation, allowing for teams to learn from each other's differences and produce successful performance (Van der Vegt et al., 2010). Moreover, teams with a higher social presence among members (i.e., through face-to-face contact) reported higher team orientation and identification with the team than those with low social presence (Andres, 2006). Overall, existing research indicates that an individual's level of team orientation could be malleable to some extent and, therefore, trainable. In summary, team orientation seems to be critical for organizations, not only for selection purposes but also for development through training, work design, and feedback interventions.

1.2 | The need for a multilevel framework of team orientation

First, it is important to discuss historical issues around the conceptualization of team orientation. Early research refers to the construct as "collective orientation" (Battaglia, 1992; Jennings, 1998; Tarnoff, 1999); however, most contemporary publications use the term "team orientation." Initially conceptualized as an individual-level trait, team orientation is theoretically context free and refers to the general orientation toward group goals and to participate in group-based work, not a preference based on any particular team or working with specific individuals. Definitions of the construct have included "the attitude or preference to work in a collective manner in team settings" (Driskell et al., 2010), "an individual's propensity for functioning as part of a team and the degree to which individuals prefer to work in group settings for task accomplishment" (Mohammed & Angell, 2004, p. 1018), and the "tendency to attend to task inputs from others in an interdependent behavior" (Driskell & Salas, 1992). These subtle differences in conceptualizations may tap into different subdimensions of team orientation (e.g., horizontal vs. vertical affiliation vs. dominance; Driskell et al., 2010; Traindis & Gelfand, 1998).

Moreover, existing research has conceptualized and operationalized team orientation at levels beyond the individual: defining, measuring, and analyzing team orientation as a team- and organizational-level phenomenon. However, the team orientation literature does not always clearly articulate these differences, and results across all levels have been conflated with the predominant theoretical perspective of team orientation as a stable, individual-level trait. Indeed, Chen et al. (2005) note that multilevel research is lacking empirical testing between levels, asserting that the majority of research indirectly examines the generalizability of individual-level models to higher ones by using single-level studies.

When considering team orientation as multilevel construct, it is important to think about the isomorphic and homologous nature of the construct. Isomorphism is essentially the equivalence of construct meaning across levels, while homology refers to the equivalence of nomological relations across levels (Tay et al., 2014). Both of these constructs operate on a gradient, in which a construct's isomorphic and homologous qualities vary. Homologous models in multilevel theory assume that (1) constructs in the model maintain theoretical similarity across levels of analysis (isomorphism) and (2) the relationships at one level of analysis are comparable to those obtained at a different level (Chen et al., 2005).

With this review, we take the position that individual-level and team-level team orientation are isomorphic enough (i.e., maintain theoretical similarity) to make a contrast in their relationships with other constructs meaningful. However, the construct is not very homologous, in that relationships with other constructs found at one level of analysis do not generalize across all levels. For example, we would expect that the relationship between individual-level team orientation and a team process such as communication would not be the same as the relationship between team-level team orientation and communication, as effective team communication relies on more than a single person's individual characteristics. The current state of the team orientation literature does not consider the isomorphic nature of this construct, leaving readers to assume similar relationships between team orientation and related constructs across all levels of analysis (Kozlowski & Klein, 2000). More broadly, organizational research calls for more attention to the differentiation and linkages among individuals, groups, and organizations (Rousseau, 2000). Therefore, it is necessary to view team orientation from a *multilevel perspective*, as conceptual and operational variations may impact our understanding of the relationships between team orientation and team processes and outcomes. Taking a multilevel perspective involves looking at the whole as well as each of the parts (Rousseau, 2000), instituting rigor to building and testing theories (Kozlowski & Klein, 2000). Through a multilevel perspective, we can consider how aggregation of team orientation may mask important individual differences and how individuals can shape the higher-level team orientation phenomenon (Kozlowski & Klein, 2000). This idea touches on the consideration of cross-level effects.

Cross-level effects can occur when individual-level characteristics interact with an organization or team context (Klein & Kozlowski, 2000; Rousseau, 2000). Likewise, an individual's level of team orientation may influence team orientation at the team and organizational levels. Similarly, organizational team orientation may influence team orientation at the team and individual levels through feedback mechanisms. Negative and positive feedback mechanisms play a role in reinforcing desired behaviors and extinguishing undesirable ones (Rousseau, 2000). While research on team orientation is fairly abundant, there are likely meaningful differences between conceptualizations and operationalizations at multiple levels that have yet to be examined.

1.3 | The current effort

Through a state-of-the-science review and meta-analysis, we introduce a multilevel perspective to develop a more holistic

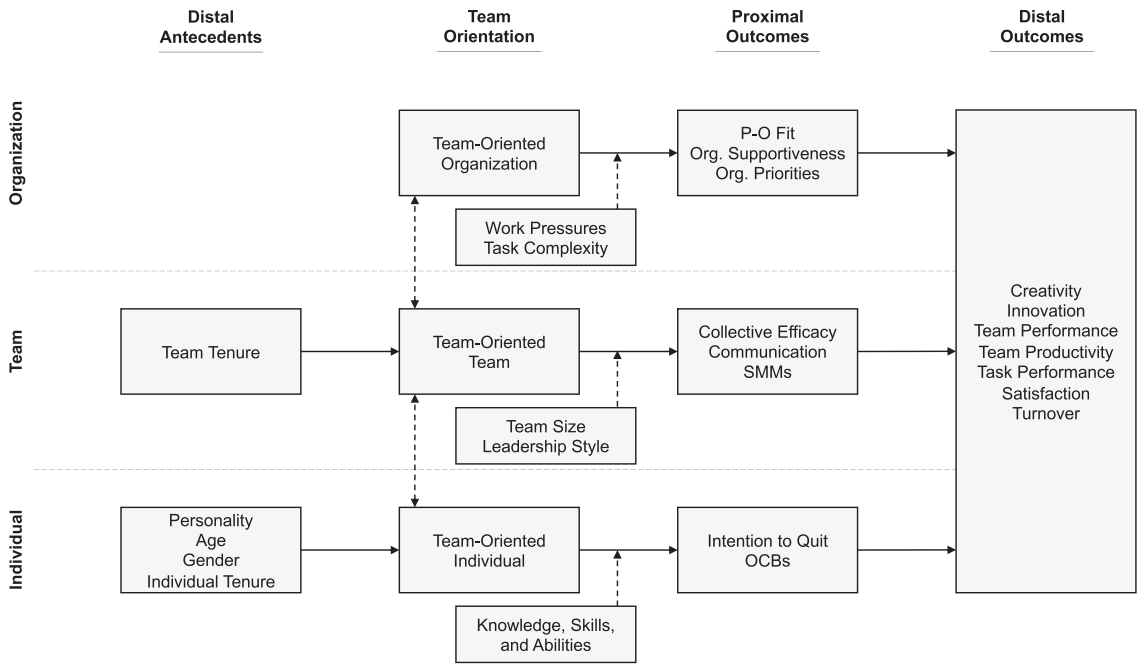

FIGURE 1 A multilevel framework of team orientation and related constructs. *Note*: All bolded constructs are included in this meta-analysis. Although the structure of this framework might imply causality, the meta-analytic effect is correlation in nature, and thus, causation should not be interpreted from these results alone. Placement in the framework is based on the typical conceptualization in primary studies

understanding of team orientation. Figure 1 details a novel multilevel framework for team orientation that guides this review. By advancing this framework, we synthesize information from disparate empirical research to provide clarity for research and practice about why team orientation matters, what is left to be discovered, and what is needed in order to leverage the power of team orientation in the workplace.

First, we present an overview of the literature to describe the state of the science on team orientation. Based on this review, we suggest a set of standardized definitions and provide items for future measure validation efforts. Next, we meta-analyze (1) the factors that affect an individual's propensity to work in a team, (2) the team processes and emergent states affected by team orientation (e.g., communication and cohesion), and (3) the corresponding outcomes influenced by team orientation (e.g., performance, creativity, and satisfaction). We discuss the various degrees of empirical evidence supporting the connections depicted in Figure 1 and meta-analyze their relationships. We also highlight the relationships that still need to be scientifically explored in future work. We end with a discussion of how these meta-analytic findings and the multilevel framework can guide future research to further the science of team orientation and its importance in the workplace.

2 | TEAM ORIENTATION REVIEW

In this section, we review how the literature has labeled, defined, and measured team orientation in order to shed light on conceptual and operational differences. We highlight issues with consistency and with establishing team orientation as its own construct, separate from other team-related constructs. Then we discuss issues around the measurement of team orientation before moving onto meta-analytic efforts.

2.1 | Defining team orientation

Table 1 presents various definitions for team orientation found in the literature at different levels of conceptualization. We also include sample items used to measure the concepts as defined. Not only is there variability in the way team orientation is defined, but the current literature reveals little consistency in the usage of "team orientation" versus "collective orientation," or what might differentiate the terms.

Collective orientation has been defined as "the propensity to work in a collective manner in team settings" (Driskell et al., 2010), "a group member's belief that the group's goals take precedence over those of its individual members and that the collective approach to performing a group task is superior to an individual one" (Cannon-Bowers et al., 1995; Driskell & Salas, 1992), and a "shared capacity to take others' behavior into account during team interactions or a belief in the team approach" (Kraiger & Wenzel, 1997). *Team orientation* definitions are similar, and in some cases practically identical (see Table 1). Additionally, some articles refer to the concept as "team orientation," but the citation for the definition refers to it as collective orientation (e.g., Vidyarthi et al., 2016). Interestingly, several articles even refer to the construct as "collective team orientation" (e.g., Andres, 2006; Mach & Baruch, 2015). The shift from collective orientation to team orientation could reflect attempts to provide additional distinctiveness from the broader term of collectivism, which is defined as "a social pattern consisting of closely linked individuals who see themselves as parts of one or more collectives" (e.g., family, coworker, and nation; Triandis, 1995, p. 2). Due to the heavy overlap in conceptualizations, we believe that collective and team orientation tap into the same underlying construct.

Beyond inconsistent terminology, we also see differences in the level at which researchers conceptualize team orientation. The literature appears to refer to team orientation as an individual-, team-, and organizational-level construct. At the *individual level*, team orientation typically refers to an individual's propensity to want to work in teams and view that teams are an effective way to get work done. *Team-level* team orientation is described as the overall attitudes of the team, such that a team-oriented team assigns high priority to team goals, group members have pride in their team duties, and all members work together proportionally as a team. We argue that this is not simply an average of team members' individual team orientation, but rather the perception of team members' beliefs and actual behaviors as they relate to teamwork. In other words, at the team level, team orientation is greater than the sum of its parts. Team-level team orientation is reflected in the literature as a shared social cognition among team members that affects how members respond to certain situations, and it is relatively stable (Mohammed & Angell, 2004). Finally, *organizational-level* team orientation refers to the value that organizations place on teamwork as a guiding principle, such that team-oriented organizations encourage cooperation within and across teams, and distribute rewards based on team performance.

Inconsistent conceptualizations make it difficult to synthesize findings across the literature without limitations. The meta-analytic results we discuss below suggest that the conceptual level of team orientation matters in evaluating the strength of its relationship with team processes and outcomes by demonstrating varying degrees of support at each level of analysis. These findings may suggest that team orientation as a multilevel construct is not homologous, in that the relationship between team orientation, its antecedents, and outcomes are not equivalent across levels. To provide additional clarity of the distinctiveness between individual-, team-, and organizational-level team orientation, we propose a standard definition and example measurement items at each level in Table 2. We hope that this will institute structure in future research on team orientation and the development and validation of distinct measures at each level.

2.2 | Measuring team orientation

Historically, measures of individual-level team orientation have been (and still are) predominately self-report in nature (Alavi & McCormick, 2007; Driskell et al., 2010; Eby & Dobbins, 1997; Jackson et al., 2006; Wagner & Moch, 1986; Watson, Johnson, Kumar, & Critelli, 1998).

TABLE 1 Conceptualizations of team orientation from the literature

TO level	Definition	Example items	Reference
Individual	An individual's orientation toward the team/work group	"I feel I am really part of my work group" "I am willing to put myself out to help my work group"	Coyle-Shapiro (1996)
	The propensity to work in a collective manner in team settings	"I find working on team projects to be very satisfying"	Hagemann and Kluge (2017)
Team	Team collectivist orientation is evidenced by greater teamwide mutual support and participation (essentially, team collectivist behaviors)	"When observing the team, to what extent did … 1. One or two members dominate the discussion more than they should? 2. Members remain stubborn in their viewpoints? 3. Members with good ideas did not seem to speak up? 4. Members seem to work as a group?"	Andres (2006)
	The attitudes that team members have toward one another and the team task. It reflects acceptance of team norms, level of group cohesiveness, and importance of team membership	"Our team members willingly participate in all relevant aspects of the team." "Our team members display a high degree of a pride in their duties and the team." "Our team members assign high priority to team goals."	Park (2004)
Organizational	Value is placed on working cooperatively toward common goals and the organization relies on team effort to get work done	"Rewards are based on teamwork" "Teams are our primary building blocks" "Cooperation across organization is encouraged"	Rahman et al. (2017)
	Perceived organizational value for working in collaboration with others, being team oriented	"How important do you feel being team oriented is as a guiding principle of most of the local people in your organization." "How important you feel working in collaboration with others is as a guiding principle of most of the local people in your organization."	Aumann (2007)

Empirical studies assessing *team orientation* typically are self-reported using Likert-type response scales asking respondents to rate their disposition toward working in teams. Sample items include "I prefer working in teams" or "If given the choice, I would choose to work on a team."

There have been efforts to develop a measure of team orientation that extends beyond self-report, utilizing conditional reasoning items (O'Shea et al., 2004). This type of measurement involves individuals being presented with situations and choosing between several options of why the event might have occurred. The authors suggest this measure assesses "implicit assumptions underlying the trait variables associated with team orientation" (O'Shea et al., 2004, p. 15); however, the validation effort produced mixed results, leaving researchers and practitioners alike to rely on more accessible self-report measures.

2.2.1 | Additive versus referent shift

Alavi and McCormick (2008) note that in the past, the most common methodological approach to studying team constructs was aggregation of individual-level measures to compute a single group-level score (e.g., Druskat & Kayes, 2000; Gibson, 2001; Mohammed & Ringseis, 2001). This method describes the additive approach to aggregation, where individual team member scores are averaged to make inferences about the team. The additive approach to measuring team orientation involves assessing each individual in a group (e.g., with items like "I prefer working in teams") and then using the average of all individuals' responses to make inferences about the overall level of team orientation in the group. Although Snijders and Bosker (1999) argue that individual scores can be aggregated when group phenomena are the area of interest, testing relationships between aggregated variables can lead to the misinterpretation of findings and incorrect conclusions about the relationships at the individual level. Indeed, when the data are not homogeneous, aggregated data can lead to different results than nonaggregated data (Hagemann, 2017). Of the studies included in this meta-analysis that analyze team orientation at the team level, aggregation and referent shift are almost evenly employed.

We argue that aggregating individual team orientation (e.g., with items like "I prioritize teamwork over my individual goals") is conceptually and analytically different from team-level team orientation, which involves shifting the referent of each item to the team (e.g., "*my team* prioritizes teamwork over personal goals"). While the individual-level phenomenon will likely influence the construct at the team level, we assert that the team-level phenomenon is more than just the average of team members' team orientation. In line with this argument, all data used in team-level analyses in this meta-analysis are from referent shift measures. We suggest that future research investigate the differences

TABLE 2 Proposed definitions and measure items for each conceptual level of team orientation

Conceptual level	Proposed definition	Proposed sample items
Individual	An individual's orientation or propensity to work in a team, given the choice	-I feel like I am really part of my team. -I believe that teams are the best way to organize production. -If given the choice, I would rather work as part of a team rather than independently. -Teams produce more than working alone. -I prioritize team goals over my own. -Working in teams is harder than working alone (R).
Team	The perceived attitudes and behaviors that a team displays that indicate that they as a group value teamwork and prioritize team goals over individual goals	-Team members put team goals ahead of individual ones. -This team recognizes the value of working in a team. -Team members only work together because they are forced to (R). -Team members willingly participate in all relevant aspects of the team. -Team members enjoy working with other team members. -Team members feel the accomplishment of team goals is important. -Team members display an awareness that they are part of a team and that teamwork is important.
Organizational	The perceived value that an organization places on teamwork, such that it considers teamwork an essential foundation to the organization	-My organization gives rewards based on teamwork. -In my organization, teamwork is used to get work done, rather than hierarchy. -My organization views teams as the primary building blocks. -Teamwork is encouraged across the organization. -People in this organization work like they are part of a team. -Teamwork is a guiding principle of the organization.

between aggregation and referent shift methods, to validate team-level team orientation as a unique phenomenon that is separate but related to individual level. Past research suggests that collective constructs are more likely to be conceptually and functionally similar to individual-level constructs when measured using referent shift, rather than the additive approach, and it has been suggested that researchers interested in testing homologous models should use measures that best maintain similarity of constructs across all levels (Chen et al., 2005). Therefore, we recommend that future research investigating similarities and differences between individual- and team-level team orientation use referent shift measures for the team level.

2.2.2 | Establishing team orientation as an independent construct

Additionally, we note a need to work toward establishing a measure of team orientation as a construct of its own, independent of other constructs in its nomological network. Some definitions and measures of team orientation include aspects of cohesion, or the shared bond that drives team members to want to work together (Salas et al., 2015), and collective efficacy. Relationships found with these constructs could potentially be confounded by the measurements themselves. The level of team orientation most concerning for establishing its independence is the team level, where existing measures sometimes use items very similar to measures of cohesion or collective efficacy, with items such as "the team is very close" and "teammates feel close to other members." However, cohesion can involve a social aspect (i.e., "our team likes spending time outside of work together"; Salas et al., 2015) that is not present in team-level team orientation. Although existing measures of team-level team orientation are flawed, we argue that it is a distinct construct with measures in need of validation.

2.3 | Literature review summary

Overall, the literature on team orientation is disjointed and inconsistent. There is a critical need for standardizing and validating both

TABLE 3 Measures of team orientation found in this review

Conceptual level	Measure name	Type of measurement	Items	Example items	Reliability	Reference
Individual						
	Collective Orientation Scale	Self-report	24	-It is important for me to maintain harmony within the team. -I would rather depend on myself than on other team members. -It is important to me that I do my job better than other group members.	.43–.82	Alavi and McCormick (2007)
	Collective Orientation Scale	Self-report	15	-When solving a problem, it is very important to make your own decision and stick by it. -When I disagree with other team members, I tend to go with my own gut feelings. -When I have a different opinion than another group member, I usually try to stick with my own opinion.	.74–.87	Driskell et al. (2010)
	Organizational Culture Profile (individual level)	Self-report	55	Rate the values that are indicative of you: -being team oriented -working in collaboration with others.	.76–.92	O'Reilly et al. (1991)
	Team Orientation Scale	Self-report	21	-All else being equal, teams are more productive than the same people would be working alone. -I generally prefer to work alone than with others. -I find that other people often have interesting contributions that I might not have thought of myself.	.82	Mohammed and Angell (2004)
	Team Orientation and Behavior Inventory (TOBI)	Self-report	56	-I do not think that the participation of all members is important as long as final agreement is achieved (R). -I find it easy to express ideas and information to the other members of my group.	.74–.83	Goodstein et al. (2007)
	Collective Orientation Scale	Self-report	6	-I think that using teams is the best way to organize the production process. -I think teams produce more than the same number of people could working alone. -I would rather work by myself than have to work on a team. -I think working in teams slows down the production process.	.86	Tarnoff (1999)
	Team-Oriented Behaviorally-Anchored Rating Scale	Conditional reasoning	5	-Cooperation: The degree to which soldiers work cooperatively with others to meet a goal. -Sociability: The degree to which soldiers are friendly and pleasant during their interactions with others.	.06–.42	O'Shea et al. (2004)

(Continues)

TABLE 3 (Continued)

Conceptual level	Measure name	Type of measurement	Items	Example items	Reliability	Reference
Team	The Nursing Teamwork Survey	Self-report	9	-Defensive response complaint by oncoming shift staff about incomplete work. -Nursing assistants and nurses not working well together. -Focusing on their own work than working together. -Dominated by staff members with strong personalities.	.75–.76	Kalisch et al. (2010)
	Group Style Instrument (GSI)	Self-report	26	-We're willing to spend enough time to ensure that our group projects are done well. -We show positive attitudes regarding group work. -We delegate our group work.	.85	Watson, Johnson, and Merritt (1998);
	The Teamwork Components Rating Scale	Self-report	3–20	-Our team members willingly participate in all relevant aspects of the team. -Our team members display a high degree of a pride in their duties and the team. -Our team members assign high priority to team goals.	.89–.90	Rosenstein (1994)
Organizational						
	Organizational Culture Profile (organizational level)	Self-report	2	Rate how important you feel each value below is as a guiding principle of most of the local people in your organization: -being team oriented -working in collaboration with others.	.92	O'Reilly et al. (1991)
	Organizational Culture Survey	Self-report	5–6	-Cooperation across different parts of the organization is actively encouraged. -Teamwork is used to get work done, rather than hierarchy. -Teams are our primary building blocks. -Work is organized so that each person can see the relationship between his or her job and the goals of the organization.	.82–.93	Denison et al. (2006)

conceptualizations and operationalizations of team orientation at each level (i.e., individual, team, and organizational). To address this issue, we propose standard definitions and sample survey items for future research to build from (see Table 2). Additionally, we provide a catalog of existing team orientation measures in Table 3. We found that several instruments are utilized frequently, including The Collective Orientation Scale (Driskell et al., 2010), The Nursing in Teamwork Survey (Kalisch et al., 2010), Organizational Culture Profile (OCP; O'Reilly et al., 1991), Group Style Instrument (GSI; Watson et al., 1993), and the Team Orientation and Behavior Inventory (TOBI; Goodstein et al., 2007). The number of items per scale range from 1 to 56 with varying evidence of internal consistency reported. Notably, although the vast majority of team orientation measures are self-report, some measures ask individuals to rate the behavior of fellow team members (O'Shea et al., 2004); but these approaches are also in need of validation.

3 | META-ANALYZING TEAM ORIENTATION

Guided by our multilevel framework (Figure 1), we investigated the antecedents, proximal outcomes, and distal outcomes of team

orientation. Here, we briefly discuss the importance of understanding what constructs can affect team orientation, and how team orientation in turn can affect proximal and distal outcomes.

3.1 | Antecedents of team orientation

Although the literature linking team orientation and demographic variables is sparse (outside of being used as control variables in many studies), there may be reason to believe there are relationships between demographics such as age and gender with a preference for working in teams. For instance, because of socioemotional selectivity and social motives (see Carstensen, 1992), older people may have a greater preference for working in teams than younger people. We might also see a difference between genders on levels of team orientation, as different genders have shown differences on social constructs in the workplace, such as seeking emotional support (Cahill & Sias, 1997). Although not specifically examining tenure, Berg et al. (2002) found that junior aviators tended to score low on team orientation, potentially making them less open to input from crew members. This may suggest that tenure can influence an individual's team orientation. Thus, we meta-analytically examine several demographic variables as potential antecedents to team orientation.

3.2 | Proximal outcomes of team orientation

Individuals that are team oriented may be more likely to see the benefit in actively putting in effort to ensure team success. Indeed, support has been found for the positive relationship between team orientation and communication (Park, 2004). Similarly, individuals that are high on team orientation may be more inclined to engage in effective coordination within their team, such that they dedicate additional time, resources, and effort into establishing shared mental models, performing backup behaviors for team members, and engaging in cooperative behaviors with their team members to accomplish their tasks.

Prior meta-analytic findings show that trust is positively correlated with team effectiveness and performance (Breuer et al., 2016; De Jong et al., 2016) and that the trust–performance relationship may be contingent on the level of task interdependence and skill differentiation (De Jong et al., 2016). Team orientation may positively correlate with trust, as team-oriented individuals tend to believe that teams are effective and prefer working in teams by definition. Additionally, previous research suggests that process and relationship conflicts are best minimized, while task conflict may have a beneficial effect on performance of decision-making teams (O'Neill et al., 2013). However, meta-analytic evidence suggests that both relationship and task conflicts have strong negative correlations with team performance and satisfaction (De Dreu & Weingart, 2003). Teams composed of teammates that are individually focused, rather than team oriented, likely experience increased conflict as a result of competing interests or work styles. Accordingly, we meta-analytically examine these potential effects.

3.3 | Distal outcomes of team orientation

Beyond more proximal outcomes, team orientation also has implications for subsequent outcomes of interest in the workplace, such as job attitudes. Present evidence for the impact of team orientation on job satisfaction seems mixed. Muramoto (2015) concluded that being team oriented may motivate effective teamwork and improve employee satisfaction. On the other hand, some research has found that team orientation is associated with decreased team member satisfaction (Jehn et al., 1997). Team orientation might also be key for innovation and learning, as well as for creativity. It could be that team-oriented individuals are more likely to learn from others by listening to their contributions, as suggested in Berg et al. (2002). Other research finds mixed results when it comes to team orientation and creativity. For instance, Lipkin (1999) detected no significant relationship between person–organization value fit on team orientation and creative thinking. Moreover, several unpublished studies name team orientation a critical value to consider when examining person–organization fit in selection (e.g., Aumann, 2007; Chuang, 2001). When team-oriented individuals are paired with team-oriented teams or organizations, they may experience better fit.

Team orientation has been found to play a critical role in team performance outcomes especially (Hagemann & Kluge, 2017). Research suggests that the deciding factor that sets apart elite athletes from others in their superior performance is team orientation (MacDougall, 2006). Dehler (2000) found a moderately positive correlation between team orientation and task performance. Benson et al. (2016) studied coaches of professional sports teams and found that team orientation is a key trait of desired followership on teams. Likewise, Moe et al. (2010) found that poor team orientation presented a key barrier to achieving team effectiveness, as teams were monitoring each other less, were not aware of what others were doing, and saw task-related conflicts as personal affronts. We meta-analytically examine several distal outcomes of team orientation (see Figure 1).

4 | METHODS

4.1 | Article selection

Four databases were used to pull potential articles across disciplines: PsycINFO, Academic Search Complete, Business Source Complete, and ProQuest. Search terms were applied to all fields and included "'*team orientation*' OR '*collective orientation*'." The search terms were applied to all fields in order to prevent excluding relevant articles on account of abstracts using different terminology (e.g., *team-oriented*, *collective-oriented*, *collectively-oriented*). A total of 477 articles were identified across all databases. After removing 113 duplicates, 364 unique articles remained and were coded.

4.2 | Screening/coding

The first round of article review involved a preliminary screening of the articles pulled from the database search. This was conducted to determine relevancy to the current effort and to remove articles that are not related to the psychological construct of team orientation. Article coding was then utilized to gain a greater understanding of the state of the literature on team orientation. Information was extracted regarding the conceptualization of team orientation (i.e., definition of team orientation, level of conceptualization/analysis, etc.) and its correlation with various other factors (e.g., communication and performance).

During article screening, articles were deemed relevant if (1) they involved a healthy adult sample (i.e., no samples including young children, animals, etc.), (2) the study focuses on the psychological construct team orientation or collective orientation (e.g., not articles discussing collective orientation changes causing strains and fractions on glass), and (3) the article has some implication for the workplace (e.g., articles referring to collectivism at the national level were excluded). Articles were also excluded if they simply mentioned the construct of team/collective orientation but did not conduct some sort of empirical analysis (quantitative or qualitative), review, or commentary of the construct. After screening for relevancy, a total of 129 articles were included for further coding.

Coding was designed to capture information relevant to team orientation and factors that it is correlated with. Coded variables included article type (empirical, review, etc.), construct conceptualization (team orientation, collective orientation, or other), construct definition, sample characteristics (type of participants, sample size, country of origin, and industry), measurement characteristics (method of measurement, level of measurement, reliability, number of items, etc.), and empirical findings (correlated constructs and effect size). Articles were excluded if they did not include any correlational data with team orientation and other factors. Factors were only included for analysis if the factor had useable correlational data from at least three separate sources, the exception of this rule being the inclusion of individual performance which only had two effects but was included in the analysis.

5 | RESULTS

All computations and analyses were run using Excel and R. We corrected for sample size and ran a fixed-effects meta-analysis using the "metafor" package in R. A total of 39 articles comprising $k = 210$ effect sizes were meta-analyzed. Relationships were meta-analyzed only if at least three effect sizes were available. Results are presented across levels overall (Table 4), at the individual level (Table 5), at the team level (Table 6), and at the organizational level (Table 7). Additionally, we provide separate overall results for employee samples (Table 8) and student samples (Table 9). Dividing results across levels of analysis resulted in some effect sizes with less than three correlations, so it is important to take caution in interpreting these preliminary results limited by the availability of primary studies.

Approximately 53% of the studies included were journal articles, ~40% dissertations and theses, and the remaining were conference papers or books. The majority of manuscripts referred to the construct of interest as team orientation (~63%), though a decent proportion used the term collective orientation (~30%). The remaining articles used some variation of the two terms, such as "collective team orientation" or "team collectivistic orientation." Sample types included employees (~56%), students (~34%), and military personnel (~8%). The majority of samples came from the United States (~50%), with other samples from North America (i.e., Canada or Mexico; ~6%), Europe (~18%), Asia (~21%), and Oceania (~5%). Finally, samples came from several different industries, including healthcare, aviation, education, military, construction, manufacturing, emergency services, and banking companies

5.1 | Antecedents

Team orientation does not appear to significantly differ in individuals or teams based on age, gender, or tenure. We found no evidence to suggest that any specific gender tends to be more team oriented, or that the tendency to be team oriented changes based on age or tenure in a position or organization. These findings are consistent across individual- and team-level conceptualizations. However, results show that team orientation at both individual and team levels is significantly related to task and social interdependence. This suggests that when teams are more socially or task interdependent, individuals and teams tend to be more team oriented. When individuals regularly rely on other team members to accomplish goals, they may recognize the value of working in teams and be inclined to prefer team-based work, or at least recognize its utility, as a result. However, this correlation could also indicate that team-oriented people naturally tend to rely on others or choose careers that offer interdependent work opportunities.

We found that higher levels of efficacy are associated with higher levels of team orientation, suggesting that when individuals believe that they are capable of accomplishing goals, or that their team is able to effectively accomplish a task, they tend to be more team oriented (Shaw et al., 2001). This finding is not surprising, considering that many established measures of team orientation include items asking whether an individual believes teamwork is effective (Driskell et al., 2010). Therefore, the significant positive correlation between efficacy and team orientation may be the product of overlapping content between the two measures. While there was not enough data to assess the relationship between team orientation and all Big 5 personality factors (Barrick & Mount, 1991), extraversion was found to be positively correlated with individual-level team orientation, such that extraverted individuals are more likely to be team oriented. Given the significant findings with team orientation and team performance (discussed later), it is surprising that previous meta-analytic findings have failed to find a significant relationship between extraversion and team

TABLE 4 Meta-analytic results at the overall level

	k	*n*	*ρ*	*SE*	*z* value	*p* value	Lower CI	Upper CI	Sig
Age	17	12 147	0.0626	0.064	0.9775	.3283	−0.0629	0.188	
Gender	19	12 603	−0.0222	0.0618	−0.359	.7196	−0.1433	0.0989	
Tenure	9	6304	0.0723	0.1016	0.7117	.4766	−0.1268	0.2713	
Efficacy	12	1673	0.4684	0.0645	7.2572	<.0001	0.3419	0.5949	***
Extraversion	4	1714	0.3419	0.0779	4.3897	<.0001	0.1893	0.4946	***
Communication	4	601	0.8183	0.0986	8.2959	<.0001	0.625	1.0116	***
Coordination	6	36 345	0.7814	0.1282	6.0959	<.0001	0.5302	1.0326	***
Cooperation/supportiveness	15	2309	0.7332	0.0527	13.9177	<.0001	0.63	0.8365	***
Trust	16	3795	0.5995	0.0966	6.2049	<.0001	0.4101	0.7888	***
Shared mental models	3	2433	0.6903	0.125	5.5208	<.0001	0.4452	0.9353	***
Backup behaviors	3	2736	0.7164	0.1159	6.1806	<.0001	0.4892	0.9435	***
Interdependence	13	2941	0.374	0.0451	8.2908	<.0001	0.2856	0.4624	***
Cohesion	6	2342	0.5979	0.0802	7.4524	<.0001	0.4407	0.7552	***
Innovation/learning	12	35 841	0.8355	0.1298	6.4351	<.0001	0.5811	1.09	***
P–O fit	4	189	0.113	0.0925	1.2223	.2216	−0.0682	0.2942	
Satisfaction	14	1568	0.3658	0.0463	7.8951	<.0001	0.275	0.4567	***
Well-being	9	5293	0.1315	0.1178	1.1162	.2644	−0.0994	0.3623	
Leadership	7	2886	0.7903	0.0818	9.665	<.0001	0.63	0.9506	***
Conflict	7	508	−0.3723	0.0603	−6.1737	<.0001	−0.4905	−0.2541	***
Individual performance	2	490	−0.4508	0.1108	−4.0698	<.0001	−0.6679	−0.2337	***
Team performance	28	4207	0.4551	0.0722	6.2993	<.0001	0.3135	0.5967	***

*p < .05 **p < .01 ***p < .001

TABLE 5 Individual-level team orientation meta-analytic results

	k	*n*	*ρ*	*SE*	*z* value	*p* value	Lower CI	Upper CI	Sig
Age	14	11 704	0.0617	0.0783	0.7875	.431	−0.0918	0.2151	
Gender	16	12 160	−0.0202	0.0755	−0.2677	.789	−0.1681	0.1277	
Tenure	7	6088	0.0734	0.1263	0.5809	.5613	−0.1742	0.3209	
Efficacy	12	1673	0.4684	0.0757	6.1848	<.0001	0.32	0.6168	***
Extraversion	4	1714	0.3419	0.0915	3.7351	.0002	0.1625	0.5213	***
Communication	1	82	−0.3522	0.2027	−1.7381	.0822	−0.7494	0.045	
Coordination	3	284	−0.2031	0.1049	−1.9363	.0528	−0.4086	0.0025	
Cooperation/supportiveness	10	2095	0.74	0.0769	9.6184	<.0001	0.5892	0.8908	***
Trust	12	941	0.2857	0.0573	4.9819	<.0001	0.1733	0.3981	***
Shared mental models	2	168	0.4284	0.1203	3.56	.0004	0.1925	0.6642	***
Interdependence	9	2094	0.2645	0.0645	4.1033	<.0001	0.1382	0.3908	***
Cohesion	5	666	0.5897	0.1005	5.87	<.0001	0.3928	0.7866	***
Innovation	6	310	0.0353	0.0889	0.3973	.6912	−0.139	0.2096	
P–O fit	2	189	0.0382	0.1488	0.2566	.7975	−0.2535	0.3298	
Satisfaction	9	867	0.3092	0.0624	4.9555	<.0001	0.1869	0.4314	***
Well-being	9	5293	0.1315	0.1403	0.9373	.3486	−0.1434	0.4064	
Conflict	4	294	−0.0346	0.0955	−0.3619	.7174	−0.2218	0.1527	
Individual performance	2	490	−0.4508	0.1306	−3.4528	.0006	−0.7067	−0.1949	***
Team performance	22	1133	0.2258	0.0418	5.4022	<.0001	0.1439	0.3077	***

*p < .05 **p < .01 ***p < .001

TABLE 6 Team-level team orientation meta-analytic results

	k	*n*	*ρ*	*SE*	*z* value	*p* value	Lower CI	Upper CI	Sig
Age	3	443	0.0932	0.0959	0.9718	.3311	−0.0947	0.281	
Gender	3	443	−0.0928	0.0959	−0.9674	.3333	−0.2808	0.0952	
Tenure	2	216	0.0487	0.1075	0.453	.6506	−0.162	0.2593	
Communication	3	519	0.8552	0.0988	8.66	<.0001	0.6617	1.0488	***
Coordination	2	471	0.7835	0.1115	7.0269	<.0001	0.5649	1.002	***
Cooperation/supportiveness	2	214	0.8519	0.0961	8.8615	<.0001	0.6635	1.0403	***
Trust	4	2854	0.6679	0.1138	5.8706	<.0001	0.4449	0.8908	***
Shared mental models	1	2265	0.705	0.1281	5.504	<.0001	0.4539	0.9561	***
Backup behaviors	3	2736	0.7164	0.1125	6.366	<.0001	0.4958	0.9369	***
Interdependence	4	847	0.5925	0.0764	7.7587	<.0001	0.4428	0.7421	***
Satisfaction	2	264	0.4875	0.1279	3.8119	.0001	0.2368	0.7381	***
Leadership	7	2886	0.7903	0.0794	9.9527	<.0001	0.6347	0.9459	***
Conflict	3	214	−0.6029	0.082	−7.3558	<.0001	−0.7635	−0.4422	***
Team performance	6	3074	0.5278	0.0917	5.7551	<.0001	0.3481	0.7076	***

*p < .05 **p < .01 ***p < .001

TABLE 7 Organizational-level team orientation meta-analytic results

	k	*n*	*ρ*	*SE*	*z* value	*p* value	Lower CI	Upper CI	Sig
Coordination	1	35 474	0.7877	0.0567	13.8816	<.0001	0.6765	0.899	***
Cooperation/supportiveness	3	189	0.0698	0.0786	0.8879	.3746	−0.0843	0.2239	
Innovation/learning	6	35 720	0.841	0.0564	14.9182	<.0001	0.7305	0.9515	***
P–O fit	2	189	0.1833	0.0863	2.1251	.0336	0.0142	0.3524	*
Satisfaction	3	485	0.4927	0.0625	7.8861	<.0001	0.3703	0.6152	***

*p < .05 **p < .01 ***p < .001

TABLE 8 Student sample meta-analytic results at the overall level

	k	*n*	*ρ*	*SE*	*z* value	*p* value	Lower CI	Upper CI	Sig
Efficacy	8	145	0.4547	0.0861	5.2783	<.0001	0.2858	0.6235	***
Communication	1	48	0.8411	0.2131	3.9471	<.0001	0.4234	1.2587	***
Coordination	3	284	−0.2031	0.13	−1.5624	.1182	−0.4578	0.0517	
Cooperation	4	48	−0.0755	0.1323	−0.5711	.5679	−0.3348	0.1837	
Trust	2	116	0.0116	0.1647	0.0702	.944	−0.3112	0.3343	
Shared mental models	2	168	0.4284	0.152	2.818	.0048	0.1304	0.7263	**
Interdependence	1	168	0.533	0.2114	2.5215	.0117	0.1187	0.9473	*
Cohesion	3	284	0.4556	0.163	2.7958	.0052	0.1362	0.775	**
Innovation	4	48	−0.0892	0.1322	−0.6749	.4998	−0.3484	0.1699	
P–O fit	2	48	0.0585	0.1845	0.317	.7513	−0.3032	0.4201	
Satisfaction	8	216	0.1522	0.0889	1.7129	.0867	−0.022	0.3264	
Individual performance	1	168	0.38	0.2145	1.7718	.0764	−0.0404	0.8004	
Team performance	6	613	0.1967	0.0982	2.0023	.0453	0.0042	0.3892	*

*p < .05 **p < .01 ***p < .001

TABLE 9 Employee sample meta-analytic results at the overall level

	k	*n*	*ρ*	*SE*	*z* value	*p* value	Lower CI	Upper CI	Sig
Age	15	11 041	0.0729	0.0487	1.4974	.1343	−0.0225	0.1684	
Gender	16	11 291	−0.0304	0.0477	−0.6375	.5238	−0.1239	0.0631	
Tenure	9	6304	0.0723	0.0712	1.0149	.3102	−0.0673	0.2119	
Efficacy	2	814	0.0643	0.0904	0.7115	.4768	−0.1129	0.2416	
Communication	3	553	0.8148	0.0795	10.2454	<.0001	0.6589	0.9707	***
Coordination	3	35 945	0.7877	0.0898	8.7688	<.0001	0.6116	0.9637	***
Cooperation	6	517	0.6819	0.0514	13.2796	<.0001	0.5813	0.7826	***
Trust	12	3356	0.6309	0.0722	8.7442	<.0001	0.4895	0.7723	***
Shared mental models	1	2265	0.705	0.0921	7.6516	<.0001	0.5244	0.8856	***
Backup behaviors	3	2736	0.7164	0.081	8.8455	<.0001	0.5576	0.8751	***
Interdependence	8	1239	0.5262	0.0474	11.095	<.0001	0.4332	0.6191	***
Cohesion	1	1676	0.6057	0.095	6.3775	<.0001	0.4196	0.7919	***
Innovation	7	35 705	0.8385	0.0907	9.2428	<.0001	0.6607	1.0163	***
P–O fit	2	141	0.1272	0.0873	1.4565	.1453	−0.044	0.2983	
Satisfaction	4	894	0.5225	0.0603	8.6589	<.0001	0.4043	0.6408	***
Well-being	9	5293	0.1315	0.0825	1.5936	.111	−0.0302	0.2932	
Leadership	7	2886	0.7903	0.0574	13.78	<.0001	0.6779	0.9027	***
Conflict	3	214	−0.6029	0.0637	−9.4581	<.0001	−0.7278	−0.4779	***
Team performance	10	2739	0.5607	0.0719	7.7972	<.0001	0.4198	0.7017	***

*p < .05 **p < .01 ***p < .001

performance (Peeters et al., 2006). However, there is evidence to suggest that extraversion predicts contextual performance (Morgeson et al., 2005) and cooperative behavior (LePine & Van Dyne, 2001).

5.2 | Proximal outcomes

We found that team orientation is positively correlated with several team processes and emergent states, including communication, coordination, cooperation, trust, shared mental models, backup behaviors, and cohesion, all of which are encouraging for the value of team orientation to teamwork, yet not particularly surprising. Additionally, at the team level, team orientation is significantly associated with lower conflict; however, there is a lack of evidence for a relationship between conflict and individual-level team orientation. This is consistent with prior evidence suggesting that relationship conflict consistently decreases as team orientation increases (Jehn et al., 1997; Mohammed & Angell, 2004) and that relationship, task, and process conflicts all have negative relationships with team orientation (Ursin, 2004).

Interestingly, individual-level team orientation is not significantly correlated with communication or coordination. Communication and team orientation are significantly and positively correlated at the team and organizational levels, while coordination is significantly correlated at the team level only. This may suggest that an individual alone being team oriented does not impact communication and coordination and perhaps that the whole team must score high on team orientation. This is an important finding for composing teams in practice where successful performance relies heavily on effective communication and coordination (e.g., aviation and air traffic control). When considering behaviors such as active listening and closed-loop communication, effective communication hinges on the participation of more than one individual, so a single team member with a high level of team orientation may not be enough to positively impact communication if other team members are not similarly team oriented. However, it is important to note that at the individual level, there was only one correlation for communication and only three for coordination, so additional evidence is needed to assess the true nature of this relationship.

Cooperation, trust, and shared mental models were positively related to team orientation at the individual and team levels. When individuals and teams are team oriented, there tends to be higher levels of cooperation, trust, and shared mental models about team responsibilities and goals. We also observed significant positive relationships between team cohesion and individual-level team orientation, and between backup behavior and team-level team orientation. A lack of primary studies prevented us from estimating effect sizes for these relationships beyond the single level of team orientation reported.

5.3 | Distal outcomes

Results indicate that team orientation across levels is associated with increased innovation, satisfaction, leadership, and team

performance. Team orientation is also negatively related to individual performance. However, the conceptual level at which it is measured may impact these relationships. Looking closer at each level of analysis, individual-level team orientation has significant positive relationships with satisfaction and team performance and, curiously, a negative relationship with individual performance. This suggests that when individuals are team oriented, they may prioritize team goals and provide backup behaviors for team members, to the detriment of their own responsibilities and performance outcomes. Although negatively associated with individual performance, team orientation is consistently and positively related to team performance across all conceptual levels. Digging deeper, team orientation may vary in its relationship with team performance based on task type, such that when individuals are team oriented, they tend to perform better on decision-making tasks (e.g., hidden profile tasks), followed by negotiation (i.e., resolving conflicts), and executing tasks (i.e., physical or psychomotor tasks; Driskell et al., 2010; Stout et al., 1997). Evidence suggests that team orientation may not be beneficial for team performance for idea-generating tasks (Driskell et al., 2010; Stout et al., 1997). Despite the overall effect, individual-level team orientation was not found to be significantly related to innovation.

At the team level, team orientation is positively related to satisfaction, leadership, and team performance. When teams are rated as high on team orientation, individuals tend to be more satisfied working in the team and with their job. Highly team-oriented groups also tend to be associated with more effective leadership, but the connection between these two constructs is not obvious. Team leadership, which involves providing direction, structure, and support for other team members (Park, 2004), may set an example for team members and encourage them to also provide support for each other. This may in turn increase overall perceptions of the team as being team oriented.

Finally, at the organizational level, team orientation is positively associated with innovation, person–organization (P–O) fit, and satisfaction. This suggests that when organizations value teamwork, believe teams are essential building blocks of the organization, and give rewards at the team level, there is more innovation and satisfaction among employees. The positive association between P–O fit and organizational-level team orientation requires additional interpretation. Perhaps, P–O fit depends on how individual-level team orientation aligns with team- and organizational-level team orientation. When people are highly motivated to work on teams and they are employed by an organization that values work structured in teams, they are likely to experience fit. However, it is important to interpret these results taking into account that there were only a few effect sizes at the organizational level, with limited evidence for P–O fit and satisfaction. Additional support is needed before drawing conclusions about the effects of organizational-level team orientation on team processes, emergent states, and outcomes. We encourage researchers to focus on relationships beyond the individual level of analysis in future work.

5.4 | Cross-level effects

Only two studies included in this meta-analysis examine potential cross-level effects in our framework, both of which come from unpublished dissertations (see Aumann, 2007; McConnell, 2006). Aumann (2007) examined the factors that impact the success of expatriates from northwestern countries and found that they were most successful when matched with organizations that have similar team orientation levels. McConnell (2006) found that individual-level team orientation was significantly and positively related to organizational-level team orientation, helping to explain normative commitment in employees, or commitment due to feeling obligated to remain with the organization. Additionally, they found that P–O fit was positively related to organizational-level team orientation, but not individual-level team orientation (McConnell, 2006).

5.5 | Student versus employee samples

Examining results by sample type, we find similar results for both employee and student samples. Meta-analytic results from exclusively student samples show that overall team orientation is significantly and positively correlated with efficacy, communication, shared mental models, interdependence, cohesion, and team performance (Table 8). Similarly, employee samples show that overall team orientation is significantly and positively related to all of these factors (except efficacy) in addition to coordination, cooperation, trust, backup behaviors, innovation, satisfaction, and leadership and negatively correlated with conflict (Table 9). While similar results are found across samples, team orientation was significantly related to more constructs with employees. This may be due to low sample sizes; however, interestingly enough, team orientation was not found to be related to satisfaction in student samples, even with a relatively large number of effects analyzed.

5.6 | Team orientation versus collective orientation

To examine potential differences between team orientation and collective orientation, data were separated based on label and results were analyzed at the overall level. Collective orientation (Table 10) was found to be significantly related to less constructs than team orientation (Table 11); however, this is likely due to collective orientation having less than half the effect sizes as studies of team orientation. This finding should not be overinterpreted, as our review concluded that both terms tap into the same underlying construct.

5.7 | Additive versus referent shift

As discussed, we believe there are conceptual and analytical differences between aggregating individual-level team orientation measures

TABLE 10 Collective orientation meta-analytic results at the overall level

	k	*n*	*ρ*	*SE*	*z* value	*p* value	Lower CI	Upper CI	Sig
Gender	1	432	−0.0697	0.1694	−0.4112	.6809	−0.4018	0.2624	
Tenure	1	432	0.1265	0.1694	0.7468	.4552	−0.2055	0.4585	
Efficacy	3	375	0.3888	0.085	4.5744	<.0001	0.2222	0.5554	***
Extraversion	1	968	0.2011	0.1692	1.1889	.2345	−0.1304	0.5327	
Communication	1	82	−0.3522	0.2656	−1.3261	.1848	−0.8729	0.1684	
Coordination	2	284	−0.2031	0.1457	−1.394	.1633	−0.4886	0.0825	
Cooperation	4	1278	0.862	0.142	6.0703	<.0001	0.5837	1.1403	***
Trust	2	229	0.0829	0.1061	0.7815	.4345	−0.125	0.2908	
Shared mental models	1	168	0.4284	0.1716	2.4963	.0125	0.092	0.7647	*
Interdependence	5	1380	0.4159	0.1178	3.5308	.0004	0.185	0.6468	***
Cohesion	4	666	0.5897	0.1462	4.0335	<.0001	0.3032	0.8763	***
Satisfaction	2	490	0.2772	0.1031	2.6889	.0072	0.0751	0.4792	**
Well-being	1	113	0.2237	0.0919	2.4347	.0149	0.0436	0.4037	*
Individual performance	2	490	−0.4508	0.1905	−2.3663	.018	−0.8242	−0.0774	*
Team performance	5	516	0.2525	0.0647	3.9045	<.0001	0.1257	0.3792	***

*p < .05 **p < .01 ***p < .001

TABLE 11 Team orientation meta-analytic results at the overall level

	k	*n*	*ρ*	*SE*	*z* value	*p* value	Lower CI	Upper CI	Sig
Age	8	11 581	0.072	0.0492	1.4649	.1429	−0.0243	0.1684	
Gender	8	11 605	−0.0164	0.0497	−0.3305	.741	−0.1138	0.081	
Tenure	4	5872	0.0669	0.0819	0.817	.4139	−0.0936	0.2274	
Efficacy	1	732	0.1266	0.1069	1.1842	.2363	−0.0829	0.3361	
Extraversion	2	746	0.4331	0.0837	5.1755	<.0001	0.2691	0.5971	***
Communication	2	471	0.8575	0.0862	9.9505	<.0001	0.6886	1.0264	***
Coordination	3	35 945	0.7877	0.0945	8.3326	<.0001	0.6024	0.9729	***
Cooperation	5	1031	0.5861	0.0484	12.11	<.0001	0.4912	0.6809	***
Trust	5	3243	0.6477	0.0783	8.2701	<.0001	0.4942	0.8012	***
Shared mental models	1	2265	0.705	0.0969	7.2748	<.0001	0.5151	0.8949	***
Backup behaviors	3	2736	0.7164	0.0852	8.4109	<.0001	0.5494	0.8833	***
Interdependence	4	995	0.5515	0.0559	9.8606	<.0001	0.4419	0.6611	***
Cohesion	1	1676	0.6057	0.0996	6.0808	<.0001	0.4105	0.801	***
Innovation	6	35 841	0.8355	0.0951	8.782	<.0001	0.6491	1.022	***
P–O fit	2	189	0.113	0.0765	1.4778	.1395	−0.0369	0.2629	
Satisfaction	5	1030	0.4731	0.0555	8.5309	<.0001	0.3644	0.5818	***
Well-being	1	5180	0.12	0.0973	1.2333	.2175	−0.0707	0.3107	
Leadership	4	2886	0.7903	0.0603	13.1122	<.0001	0.6722	0.9084	***
Conflict	3	508	−0.3723	0.0479	−7.7686	<.0001	−0.4662	−0.2784	***
Team performance	5	3320	0.5045	0.0666	7.577	<.0001	0.374	0.6349	***

*p < .05 **p < .01 ***p < .001

(e.g., "I prefer working in a team") and using measures that shift the referent of items to the team (e.g., "My team prefers working together instead of individually") to make inferences about the team. Multilevel theory asserts that if relationships are not homologous across levels, it signals a boundary condition and the need to further investigate how the construct operates at each distinct level (Chen et al., 2005). To investigate these differences, we analyzed relationships between additive team-level team orientation and factors in the framework

TABLE 12 Additive team-level team orientation meta-analytic results

	k	*n*	*ρ*	*SE*	*z* value	*p* value	Lower CI	Upper CI	Sig
Age	1	540	0.0521	0.1665	0.3131	.7542	−0.2742	0.3785	
Gender	2	746	0.1584	0.1282	1.2363	.2163	−0.0927	0.4096	
Efficacy	4	1107	0.2977	0.0713	4.1753	<.0001	0.1579	0.4374	***
Extraversion	4	1714	0.3419	0.0934	3.66	.0003	0.1588	0.525	***
Communication	1	82	−0.3522	0.2054	−1.7153	.0863	−0.7547	0.0502	
Cooperation	5	1744	0.802	0.0909	8.8268	<.0001	0.624	0.9801	***
Trust	1	323	0.1871	0.1222	1.5315	.1256	−0.0524	0.4266	
Interdependence	3	1050	0.3978	0.1096	3.6291	.0003	0.183	0.6127	***
Cohesion	1	60	0.1109	0.2259	0.4909	.6235	−0.3319	0.5537	
Innovation	1	88	0.08	0.1925	0.4156	.6777	−0.2973	0.4573	
Satisfaction	1	88	0.28	0.1884	1.4866	.1371	−0.0892	0.6492	
Conflict	2	294	−0.0346	0.0972	−0.3556	.7221	−0.2252	0.156	
Team performance	4	765	0.1674	0.0778	2.1507	.0315	0.0148	0.3199	*

*p < .05 **p < .01 ***p < .001

(Table 12). Comparing results to referent shift measures (see Table 3), there appear to be differences in effect size strength between the two methods. For example, significant results were found for communication, trust, satisfaction, and conflict in referent shift measures, but not in measures that aggregated from individual level. These results may indicate that team-level team orientation is not the same as aggregated individual-level team orientation; however, due to the limited studies and low sample size, results should be interpreted with caution. We encourage future research to investigate the extent and implications of these differences to solidify distinctions between levels of team orientation.

6 | DISCUSSION

6.1 | Implications for selection and training

A significant portion of the literature suggests that team orientation is typically viewed as an individual-level trait, such that it is a predisposition for working in teams in general and not toward one specific team. Our meta-analytic findings reveal the significant importance of team orientation in the workplace, particularly for team performance, suggesting that it should be considered in the selection of employees conducting team-based work. If work is not structured in teams (which is increasingly rare as organizations are relying more on teams to accomplish goals), team orientation may prove to be counterproductive. Again, the negative relationship with individual performance is founded from only two studies and needs to be substantiated with more empirical support.

Evidence suggests that although team orientation is typically viewed as a fairly stable trait, it may indeed be malleable. We found that high efficacy for teamwork and positive past experience in teams is associated with high levels of team orientation (Eby & Dobbins, 1997; Shaw et al., 2001), supporting its malleability. This has significant implications for training, but this proposition needs to be tested empirically. Team orientation's significant relationship with several essential team processes and outcomes is promising for team training efforts, as people might develop team orientation with exposure to positive team experiences driven by effective teamwork skills, but this would need to be assessed longitudinally to speak to directional relationships. Therefore, we call for additional research on the malleability of team orientation and effective development interventions, preferably with longitudinal study designs to further support directionality inferred in the multilevel framework.

6.2 | Future research

This review summarizes valuable knowledge uncovered by prior research on team orientation to provide clarity around its value in the workplace. At the same time, it reveals areas ripe for development. Along with the recommendations made throughout this discussion, we suggest future research on team orientation to focus on four key areas: (1) examining the malleability of team orientation, (2) understanding the context of teams where team orientation might be critical, (3) investigating boundary conditions of team orientation and the benefits it brings, and (4) investigating the multilevel linkages of team orientation.

To begin with, and as asserted above in our call for more research, we still do not know whether team orientation is malleable, as suggested by Eby and Dobbins (1997). We suspect the extent of malleability and the resources required to change team orientation may greatly differ between the levels. Although our framework may suggest directionality (e.g., "antecedents" and "outcomes"), it is important to note that this meta-analysis is correlational in nature. In order to better understand the causal direction of relationships, as well as the

extent to which team orientation is malleable, future work should employ longitudinal and/or controlled experimental designs. This work would add understanding around the nature of team orientation to uncover if it is a stable trait, a state that fluctuates given team and organizational contexts, or whether there are both trait and state components. Indeed, the current understanding of state–trait distinctions indicate that most psychological constructs contain elements of both (Geiser et al., 2017).

When considering team and organizational conditions, we suspect that emergent states may interact with the relationship between team orientation and performance. For example, if a team is low in psychological safety, team-oriented members (who typically desire to contribute) may feel unable to speak up and voice their opinions to yield effective group problem-solving. Future research efforts, using the aforementioned recommendations for standardizing the team orientation construct and its measurement at each conceptual level, may be able to uncover evidence supporting either the trait or state approach, as well as identify the influencing team and organizational conditions.

Next, research should work to investigate the context in which teams operate so that we can better understand the conditions under which team orientation might be most important. Hollenbeck et al. (2012) propose a team-type taxonomy that considers skill differentiation among members, authority differentiation, and temporal stability of the team. Although we sought to include this information in the meta-analysis, primary studies often failed to report enough information on team context to declaratively decide on these factors. Future work should account for different contextual factors, such as those in Hollenbeck et al.'s (2012) taxonomy, so that we can better understand the importance of team orientation across dimensions that create meaningful differences among teams.

We hypothesize that team orientation is particularly significant in teams working with low authority differentiation, such that team members must engage in decision-making as a collective, rather than a single individual (e.g., leader) being responsible for decision-making. Indeed, previous research indicates that group members that are team oriented and believe in team goals tend to be more effective at handling conflict (Mohammed & Angell, 2004; Nemiroff & King, 1975) and team decision-making (Alper et al., 1998; Hagemann & Kluge, 2017). Additionally, we hypothesize that trait team orientation is highly important in temporally unstable teams, such that members remain team focused despite frequent fluctuations in membership. However, these temporally unstable teams could provide ample opportunity for investigating the degree to which team orientation operates as a state and researchers could track changes in state-level team orientation as membership fluctuates, possibly uncovering team conditions that affect team orientation.

Additionally, we think interesting findings could result from work exploring the team and organizational boundary conditions of team orientation and the benefits it can bring to the workplace. This meta-analysis found that team orientation has a significantly negative relationship with individual-level performance. Researchers should probe this finding further to uncover potential mediators to this process so that we can understand the potential "dark side" of team orientation. Additionally, investigating and reporting on other potential negative outcomes of team orientation would allow for greater insight for developing countermeasures to better develop teams in the future. We attempted to account for potentially relevant outcomes such as turnover and groupthink but found existing empirical literature to be insufficient for meta-analytically examining these effects.

Finally, the literature has called for additional research investigating the linkages between multilevel constructs (Rousseau, 2000). Specifically, they call for studies using time lags to explicitly investigate causal effects. In the case of team orientation, there is very limited research examining the linkages between individual-, team-, and organizational-level team orientation, let alone any evidence based on longitudinal designs to find support for directionality. Future research should investigate the isomorphic and homologous nature of the construct, as well as cross-level effects, or how one level of team orientation (e.g., individual, team, or organizational) may interact and influence the others. If support for interactions between levels can be found, this may also shed light on the malleability of the construct and have significant training and organizational change implications.

7 | CONCLUSION

Until now, the team science literature lacked an in-depth analysis of the team orientation construct. With this review and meta-analysis, we uncovered evidence suggesting that team orientation does matter, particularly for team-based work and organizational outcomes. Moreover, meta-analytic results did not detect significant differences in team orientation between genders, across age, or by tenure. Results do suggest that team orientation is significantly related to proximal outcomes such as communication, coordination, cooperation, trust, shared mental models, cohesion, and backup behaviors. However, this relationship varies in significance based on the conceptual level of team orientation. Overall, we synthesize the current body of literature on team orientation across disciplines. We highlight the various conceptualizations and operationalizations of team orientation and contribute a novel, multilevel framework to synthesize empirical findings relating team orientation to its nomological network and propel future research to better understanding the potential implications of team orientation in the workplace.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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REFERENCES*

Ahmadpoor, M., & Jones, B. F. (2019). Decoding team and individual impact in science and invention. *Proceedings of the National Academy of Sciences*, *116*(28), 13885–13890.

Alavi, S. B., & McCormick, J. (2007). Measurement of vertical and horizontal idiocentrism and allocentrism in small groups. *Small Group Research*, *38*(4), 556–564.

*Alavi, S. B., & McCormick, J. (2008). The roles of perceived task interdependence and group members' interdependence in the development of collective efficacy in university student group contexts. *British Journal of Educational Psychology*, *78*(3), 375–393.

Alper, S., Tjosvold, D., & Law, K. S. (1998). Interdependence and controversy in group decision making: Antecedents to effective self-managing teams. *Organizational Behavior and Human Decision Processes*, *74*(1), 33–52.

*Andres, H. P. (2006). The impact of communication medium on virtual team group process. *Information Resources Management Journal (IRMJ)*, *19*(2), 1–17.

*Ankrah, N. A. (2007). An investigation into the impact of culture on construction project performance *[Unpublished doctoral dissertation]*. University of Wolverhampton.

*Aumann, K. A. (2007). Being a stranger in a strange land: The relationship between person-organization fit on the work-related and broad cultural value dimensions and outcomes related to expatriates' success *[Unpublished doctoral dissertation]*. Columbia University.

Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, *44*(1), 1–26.

Battaglia, B. A. B. (1992). Study of intercultural interaction themes in one healthcare workplace *[Unpublished doctoral dissertation]*. The Fielding Institute.

Benson, A. J., Hardy, J., & Eys, M. (2016). Contextualizing leaders' interpretations of proactive followership. *Journal of Organizational Behavior*, *37*(7), 949–966.

*Berg, J. S., Moore, J. L., Retzlaff, P. D., & King, R. E. (2002). Assessment of personality and crew interaction skills in successful naval aviators. *Aviation, Space, and Environmental Medicine*, *73*(6), 575–579.

Borrego, M., & Newswander, L. K. (2010). Definitions of interdisciplinary research: Toward graduate-level interdisciplinary learning outcomes. *The Review of Higher Education*, *34*(1), 61–84.

Braithwaite, J., Clay-Williams, R., Vecellio, E., Marks, D., Hooper, T., Westbrook, M., Westbrook, J., Blakely, B., & Ludlow, K. (2016). The basis of clinical tribalism, hierarchy and stereotyping: A laboratory-controlled teamwork experiment. *BMJ Open*, *6*(7), e012467.

Breuer, C., Hüffmeier, J., & Hertel, G. (2016). Does trust matter more in virtual teams? A meta-analysis of trust and team effectiveness considering virtuality and documentation as moderators. *Journal of Applied Psychology*, *101*(8), 1151–1177.

*Buelow, K. (2013). Examining the relationship between career interests, styles, and subjective well-being with the strong interest inventory *[Unpublished master's thesis]*. Southern Illinois University at Carbondale.

Cahill, D. J., & Sias, P. M. (1997). The perceived social costs and importance of seeking emotional support in the workplace: Gender differences and similarities. *Communication Research Reports*, *14*(2), 231–240.

Cannon-Bowers, J. A., Tannenbaum, S. I., Salas, E., & Volpe, C. E. (1995). Defining team competencies and establishing team training requirements. In R. Guzzo & E. Salas (Eds.), *Team effectiveness and decision making in organizations* (pp. 330–380). Jossey-Bass.

Carstensen, L. L. (1992). Social and emotional patterns in adulthood: Support for socioemotional selectivity theory. *Psychology and Aging*, *7*(3), 331–338.

CEB Corporate Leadership Council. (2014). *The performance transformation: Strategies to build a workforce of enterprise contributors*.

Chen, G., Bliese, P. D., & Mathieu, J. E. (2005). Conceptual framework and statistical procedures for delineating and testing multilevel theories of homology. *Organizational Research Methods*, *8*(4), 375–409.

Chuang, A. (2001). *The perceived importance of person -job fit and person - organization fit between and within interview stages*. (Doctoral dissertation, University of Minnesota).

*Coyle-Shapiro, J. A. (1996). The impact of a TQM intervention on work attitudes: A longitudinal case study *[Unpublished doctoral dissertation]*. The London School of Economics and Political Science.

Cross, R., Rebele, R., & Grant, A. (2016). Collaborative overload. *Harvard Business Review*, *94*(1), 74–79.

De Dreu, C. K., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology*, *88*(4), 741–749.

De Jong, B. A., Dirks, K. T., & Gillespie, N. (2016). Trust and team performance: A meta-analysis of main effects, moderators, and covariates. *Journal of Applied Psychology*, *101*(8), 1134–1150.

DeChurch, L., & Mesmer-Magnus, J. (2010). The cognitive underpinnings of effective teamwork: A meta-analysis. *Journal of Applied Psychology*, *95*(1), 32–53.

*Dehler, C. M. (2000). The effects of group membership and task experience on asynchronous computer-mediated group performance, group competencies and group member reactions *[Unpublished doctoral dissertation]*. Concordia University.

*Denison, D. R., Janovics, J., Young, J., & Cho, H. J. (2006). *Diagnosing organizational cultures: Validating a model and method*. Denison Consulting Group.

Dippong, J. (2012). The effects of scope condition-based participant exclusion on experimental outcomes in expectation states research: A meta-analysis. *Social Science Research*, *41*(2), 359–371.

Driskell, J. E., & Salas, E. (1992). Collective behavior and team performance. *Human Factors*, *34*(3), 277–288.

*Driskell, J. E., Salas, E., & Hughes, S. (2010). Collective orientation and team performance: Development of an individual differences measure. *Human Factors*, *52*(2), 316–328.

Druskat, V. U., & Kayes, D. C. (2000). Learning versus performance in short-term project teams. *Small Group Research*, *31*(3), 328–353.

*Eby, L. T., & Dobbins, G. H. (1997). Collectivistic orientation in teams: An individual and group-level analysis. *Journal of Organizational Behavior*, *18*(3), 275–295.

Fiore, S. M. (2008). Interdisciplinarity as teamwork: How the science of teams can inform team science. *Small Group Research*, *39*(3), 251–277.

Fiore, S. M., Rosen, M. A., Smith-Jentsch, K. A., Salas, E., Letsky, M., & Warner, N. (2010). Toward an understanding of macrocognition in teams: Predicting processes in complex collaborative contexts. *Human Factors*, *52*(2), 203–224.

*Fong, P. S., & Lung, B. W. (2007). Interorganizational teamwork in the construction industry. *Journal of Construction Engineering and Management*, *133*(2), 157–168.

Geiser, C., Götz, T., Preckel, F., & Freund, P. A. (2017). States and traits. *European Journal of Psychological Assessment*, *33*(4), 219–223.

Gibson, C. B. (2001). Me and us: Differential relationships among goal-setting training, efficacy and effectiveness at the individual and team level. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *22*(7), 789–808.

Goodstein, L. D., Cooke, P., & Goodstein, J. (2007). The team orientation and behavior inventory (TOBI). In *The Pfeiffer Book of Successful Team-Building Tools* (pp. 437–454).

Guzzo, R. A., & Dickson, M. W. (1996). Teams in organizations: Recent research on performance and effectiveness. *Annual Review of Psychology*, *47*(1), 307–338.

*Hagemann, V. (2017). Development of a German-language questionnaire to measure collective orientation as an individual attitude. *Swiss Journal of Psychology*, *76*(3), 91–105.

*Hagemann, V., & Kluge, A. (2017). Complex problem solving in teams: The impact of collective orientation on team process demands. *Frontiers in Psychology*, *8*, 1730–1747.

*Hees, C. (2010). Personally satisfying: Using personal style scales to enhance the prediction of career satisfaction *[Unpublished doctoral dissertation]*. Southern Illinois University Carbondale.

Hollenbeck, J. R., Beersma, B., & Schouten, M. E. (2012). Beyond team types and taxonomies: A dimensional scaling conceptualization for team description. *Academy of Management Review*, *37*(1), 82–106.

Jackson, C. L., Colquitt, J. A., Wesson, M. J., & Zapata-Phelan, C. P. (2006). Psychological collectivism: A measurement validation and linkage to group member performance. *Journal of Applied Psychology*, *91*(4), 884–899.

*Jehn, K. A., Chadwick, C., & Thatcher, S. M. (1997). To agree or not to agree: The effects of value congruence, individual demographic dissimilarity, and conflict on workgroup outcomes. *International Journal of Conflict Management*, *8*(4), 287–305.

Jennings, D. A. (1998). Subgroup differences in cognitive ability test performance: The incremental contributions of self-efficacy *[Unpublished master's thesis]*. Michigan State University.

*Joshi, R. J., & Sodhi, J. S. (2011). Drivers of employee engagement in Indian organizations. *Indian Journal of Industrial Relations*, *47*(1), 162–182.

Kaba, A., Wishart, I., Fraser, K., Coderre, S., & McLaughlin, K. (2016). Are we at risk of groupthink in our approach to teamwork interventions in health care? *Medical Education*, *50*(4), 400–408.

Kalisch, B. J., Lee, H., & Salas, E. (2010). The development and testing of the nursing teamwork survey. *Nursing Research*, *59*(1), 42–50.

*Kalisch, B. J., Russell, K., & Lee, K. H. (2013). Nursing teamwork and unit size. *Western Journal of Nursing Research*, *35*(2), 214–225.

Klein, K. J., & Kozlowski, S. W. J. (2000). From micro to meso: Critical steps in conceptualizing and conducting multilevel research. *Organizational Research Methods*, *3*(3), 211–236. https://doi.org/10.1177/109442810033001

*Klein, S. M. (1996). Work pressure as a determinant of work group behavior. *Small Group Research*, *27*(2), 299–315.

Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. K. J. Klein & S. W. J. Kozlowski, *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*. (3–90). Jossey-Bass.

Kraiger, K., & Wenzel, L. H. (1997). Conceptual development and empirical evaluation of measures of shared mental models as indicators of team effectiveness. In M. Brannick, E. Salas, & C. Prince (Eds.), *Team performance assessment and measurement: Theory, methods, and applications* (pp. 63–84). Psychology Press.

LePine, J. A., & Van Dyne, L. (2001). Voice and cooperative behavior as contrasting forms of contextual performance: Evidence of differential relationships with big five personality characteristics and cognitive ability. *Journal of Applied Psychology*, *86*(2), 326–336.

Lipkin, J. N. (1999). *Person-organization fit and creative thinking: A study of the relationship between person-organization value fit and creative thinking*. (Doctoral dissertation, California School of Professional Psychology-Los Angeles).

*Liu, Y. (2006). Teamwork in Chinese organizations: A new concept and framework *[Unpublished doctoral dissertation]*. Old Dominion University.

*Lyman, K. (2019). Relationship between post-resuscitation debriefings and perceptions of teamwork in emergency department nurses *[Unpublished doctoral dissertation]*. Walden University.

MacDougall, M. P. (2006). Psychological characteristics of elite male ice hockey players: A hockey evaluators perspective. (Doctoral dissertation, University of New Brunswick).

*Mach, M., & Baruch, Y. (2015). Team performance in cross cultural project teams: The moderated mediation role of consensus, heterogeneity, faultlines and trust. *Cross Cultural Management*, *22*(3), 464–486.

*Martinek, D. (2019). The consequences of job-related pressure for self-determined teaching. *Social Psychology of Education*, *22*(1), 133–148.

*McConnell, J. C. (2006). An examination of the relationships among person–organization fit, individual and organizational value structures, and affective, normative, and continuance components of organizational commitment *[Unpublished master's thesis]*. Nova Southeastern University.

*Miles, J. A. (2000). Relationships of collective orientation and cohesion to team outcomes. *Psychological Reports*, *86*(2), 435–444.

Moe, N. B., Dingsøyr, T., & Dybå, T. (2010). A teamwork model for understanding an agile team: A case study of a Scrum project. *Information and Software Technology*, *52*(5), 480–491.

*Mohammed, S., & Angell, L. C. (2004). Surface-and deep-level diversity in workgroups: Examining the moderating effects of team orientation and team process on relationship conflict. *Journal of Organizational Behavior*, *25*, 1015–1039.

Mohammed, S., & Ringseis, E. (2001). Cognitive diversity and consensus in group decision making: The role of inputs, processes, and outcomes. *Organizational Behavior and Human Decision Processes*, *85*(2), 310–335.

Morgeson, F. P., Reider, M. H., & Campion, M. A. (2005). Selecting individuals in team settings: The importance of social skills, personality characteristics, and teamwork knowledge. *Personnel Psychology*, *58*(3), 583–611.

Muramoto, K. R. (2015). *An examination using the gap analysis framework of employees' perceptions of promising practices supporting teamwork in a federal agency* (Doctoral dissertation, University of Southern California).

*Nancarrow, L. (2002). The impact of work group diversity on organizational outcomes *[Unpublished doctoral dissertation]*. Carleton University.

Nemiroff, P. M., & King, D. C. (1975). Group decision-making performance as influenced by consensus and self-orientation. *Human Relations*, *28*(1), 1–21.

O'Neill, T. A., Allen, N. J., & Hastings, S. E. (2013). Examining the "pros" and "cons" of team conflict: A team-level meta-analysis of task, relationship, and process conflict. *Human Performance*, *26*(3), 236–260.

O'Reilly, C. A. III, Chatman, J., & Caldwell, D. F. (1991). People and organizational culture: A profile comparison approach to assessing person-organization fit. *Academy of Management Journal*, *34*(3), 487–516.

O'Shea, P. G., Driskell, J. E., Goodwin, G. F., Zbylut, M. L., & Weiss, S. M. (2004). *Development of a conditional reasoning measure of team orientation*. American Institutes For Research Washington DC.

*Park, S. (2004). Teacher team empowerment and commitment: Exploring effects of teamwork *[Unpublished doctoral dissertation]*. The University of Iowa.

Peeters, M. A., Van Tuijl, H. F., Rutte, C. G., & Reymen, I. M. (2006). Personality and team performance: A meta-analysis. *European Journal of Personality: Published for the European Association of Personality Psychology*, *20*(5), 377–396.

Pugliesi, K. (1999). The consequences of emotional labor: Effects on work stress, job satisfaction, and well-being. *Motivation and Emotion*, *23*(2), 125–154.

Pulakos, E. D., Kantrowitz, T., & Schneider, B. (2019). What leads to organizational agility: It's not what you think. *Consulting Psychology Journal: Practice and Research*, *71*(4), 305–320.

*Rahman, U. U., Rehman, C. A., Imran, M. K., & Aslam, U. (2017). Does team orientation matter? Linking work engagement and relational psychological contract with performance. *Journal of Management Development*, *36*(9), 1102–1113.

*Rhee, J., Zhao, X., Jun, I., & Kim, C. (2017). Effects of collectivism on Chinese organizational citizenship behavior: Guanxi as moderator. *Social Behavior and Personality: An International Journal*, *45*(7), 1127–1142.

*Rosenstein, R. (1994). The teamwork components model: An analysis using structural equation modeling *[Unpublished doctoral dissertation]*. Old Dominion University.

Rousseau, D. M. (2000). Multilevel competencies and missing linkages. In K. J. Klein & S. W. J. Kozlowski (Eds.), Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions, (pp. 572–582). Jossey-Bass.

Salas, E., Bisbey, T. M., Traylor, A. M., & Rosen, M. A. (2020). Can teamwork promote safety in organizations? *Annual Review of Organizational Psychology and Organizational Behavior*, *7*, 283–313.

Salas, E., Grossman, R., Hughes, A. M., & Coultas, C. W. (2015). Measuring team cohesion: Observations from the science. *Human Factors*, *57*(3), 365–374.

Salas, E., Sims, D. E., & Burke, C. S. (2005). Is there a "big five" in teamwork? *Small Group Research*, *36*(5), 555–599.

Saleh, S. D., & Wang, C. K. (1993). The management of innovation: Strategy, structure, and organizational climate. *IEEE Transactions on Engineering Management*, *40*(1), 14–21.

*Shaw, J. D., Duffy, M. K., & Stark, E. M. (2001). Team reward attitude: Construct development and initial validation. *Journal of Organizational Behavior*, *22*(8), 903–917.

*Smazik, K. G. (2012). The relationship between swift trust, individual collectivism, and subjective well-being among short-term, virtual, self-directed project teams *[Unpublished doctoral dissertation]*. Walden University.

Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. Sage.

*Stout, R. J., Driskell, J. E., & Salas, E. (1997, October). Collective orientation and team performance. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 41, No. 2, pp. 1190–1194). SAGE Publications.

*Switzer, K. C. (2014). The effects of time and collective orientation on teamwork and performance outcomes *[Unpublished doctoral dissertation]*. Hofstra University.

Tait, R. (1996). The attributes of leadership. *Leadership & Organization Development Journal*, *17*(1), 27–31.

*Tarnoff, K. A. (1999). An exploratory study of the determinants and outcomes of shared mental models of skill use in autonomous work teams *[Unpublished doctoral dissertation]*. Virginia Polytechnic Institute and State University.

Tay, L., Woo, S. E., & Vermunt, J. K. (2014). A conceptual and methodological framework for psychometric isomorphism: Validation of multilevel construct measures. *Organizational Research Methods*, *17*(1), 77–106.

Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: Path analyses based on meta-analytic findings. *Personnel Psychology*, *46*(2), 259–293.

Triandis, H. C. (1995). *Individualism and collectivism*. Westview Press.

Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology*, *74*(1), 118–128.

*Ursin, J. (2004). Characteristics of Finnish medical and engineering research group work *[Unpublished doctoral dissertation]*. University of Jyväskylä.

Van der Vegt, G. S., De Jong, S. B., Bunderson, J. S., & Molleman, E. (2010). Power asymmetry and learning in teams: The moderating role of performance feedback. *Organization Science*, *21*(2), 347–361.

*Vidyarthi, P. R., Singh, S., Erdogan, B., Chaudhry, A., Posthuma, R., & Anand, S. (2016). Individual deals within teams: Investigating the role of relative i-deals for employee performance. *Journal of Applied Psychology*, *101*(11), 1536–1552.

Vogel, A. L., Feng, A., Oh, A., Hall, K. L., Stipelman, B. A., Stokols, D., Okamoto, J., Perna, F. M., Moser, R., & Nebeling, L. (2012). Influence of a National Cancer Institute transdisciplinary research and training initiative on trainees' transdisciplinary research competencies and scholarly productivity. *Translational Behavioral Medicine*, *2*(4), 459–468.

Wagner, J. A., & Moch, M. K. (1986). Individualism-collectivism: Concept and measure. *Group & Organization Studies*, *11*(3), 280–304.

*Wang, Z., Li, C., Wu, J., & Liu, L. (2014). The mediating effect of cooperative goals on the relationship between team orientation and team member exchange. *Social Behavior and Personality: An International Journal*, *42*(4), 685–693.

Watson, W., Kumar, K., & Michaelsen, L. (1993). Cultural diversity's impact on interaction process and performance: Comparing homogeneous and diverse task groups. *Academy of Management Journal*, *38*, 590–602.

Watson, W. E., Johnson, L., Kumar, K., & Critelli, J. (1998). Process gain and process loss: Comparing interpersonal processes and performance of culturally diverse and non-diverse teams across time. *International Journal of Intercultural Relations*, *22*(4), 409–430.

*Watson, W. E., Johnson, L., & Merritt, D. (1998). Team orientation, self-orientation, and diversity in task groups: Their connection to team performance over time. *Group & Organization Management*, *23*(2), 161–188.

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14. ABSTRACT

As teams are a foundational component of modern organizations, selection and training of employees to facilitate teamwork is of key importance. In this paper, we review and meta-analyze research on the construct of team orientation. We differentiate between organizational-, team-, and individual-level team orientation and discuss multilevel theory implications. A total of 39 articles comprising 210 effects were meta-analyzed. Results indicate that team orientation is important, particularly for effective teamwork and team-based outcomes. Specifically, at the overall level, we found significant and positive relationships with communication, coordination, cooperation, trust, shared mental models, backup behaviors, cohesion, innovation, satisfaction, leadership, and team performance. Team orientation was found to be negatively correlated with conflict. Interestingly, we found a negative relationship between team orientation and individual-level performance. We discuss the implications of these findings and make suggestions for future work to build upon these findings.

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