Struggling to fix teams in real work settings:

A challenge assessment and an intervention toolbox

Abstract

After more than 80 years in predicting organizational performance, empirical evidence reveals a science of teams that seems unable to consistently implement solutions for teams performing in real work settings –outside and away from the isolated teams breeding in research laboratories in the academic context. To bridge this growing practitioners-researchers divide, we first identify five main challenges involved in working with teams today (purposeful team staffing; proper task design and allocation; task and interaction process functionality; appropriate affective tone; and suitable team assessment). And second, we offer a toolbox of interventions (empowering and restorative) to help practitioners to transform the potential threats inherent in these challenges into opportunities for team effectiveness. Our five-challenge diagnosis and proposed intervention toolbox contribute to better address research questions and theoretical falsifiability using teams performing in real work settings, and to assess and intervene in teams by adjusting their internal functioning to contextual conditions and constraints.

Keywords: team effectiveness, team diagnostic, team interventions, real work settings.

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Teams have become organizations' main response to face the complexity and accelerated pace of change we are experiencing. Although teams are not required in organizations for every duty (West, 2012), their versatility to cope with complex tasks demanding novel solutions and the positive impact of teamwork on employee satisfaction, motivation, and organizational effectiveness (Mathieu et al., 2017) have made them ubiquitous.

The widespread use of teamwork enabled the science of teams to accumulate more than 80 years of research in predicting organizational performance, focusing on team design, team building, team development, team training, team coordination, team cognition, team leadership and team effectiveness. There is consensus about how applying the knowledge contained in such research areas will improve team and organizational effectiveness, including financial benefits (Klein et al., 2009). However, the available empirical evidence on this regard is weak and inconsistent (e.g., Mathieu, et al., 2017; Richter et al., 2011). The situation seems paradoxical, with the exponential development of team research and its practical recommendations over the last 25 years, while we remain unable to consistently implement solutions for teams operating in real settings.

We recognize two main causes for this situation: first, the fact that teams are charged with steadily complex tasks, while embedded in organizations where change is the norm, has made them increasingly complex, temporary and diverse in nature. Hence, the current conditions experienced by teams are very different from our conventional approach to teamwork (Tannenbaum et al., 2012). Second, team research efforts have mainly developed theoretical and lab studies with a confirmative orientation, without equal efforts being made to empirically test and falsify theories in the wild. While the last decade has seen an upward

trend in research using teams in real settings, so far the focus has been on very specific teams and environments, such as police SWAT teams and film production crews (e.g., Bechky & Okhuysen, 2011), surgical teams (e.g., Vashdi et al., 2013), firefighters teams (e.g., Marques-Quinteiro et al., 2020) or teams in exotic or extreme environments (e.g., Maynard et al., 2018). However, the scarcity of studies including real teams and the disparity of the teams included on them, does not allow an integration that promotes the development and testing of theories for the moment. It seems hard to assume, but unfortunately no team research offers enough empirical evidence on the extent to which team processes and effectiveness may be enhanced by interventions derived from theory (as happens between team training and team leadership, where, barring the military domain, empirical efforts to test practical interventions have not been systematically implemented –Kozlowski, 2018).

In short, in real work settings *teams they are a-changin'*, and we are neglecting them in our research endeavors. These two facts are opening a divide between research and practice, making it increasingly difficult to respond to a stubborn reality, unremittingly telling us that teams' outfits in real work settings do not fit in team research. Because scholars are already reflecting on how traditional team research is challenged by the way teams have changed (e.g., Tannenbaum, et al., 2012; West & Lyubovnikova, 2012), we focus herein on the main challenges involved in working with teams in work settings today, and how to transform into opportunities the threats these challenges entail.

Our analysis target are teams performing in real work settings, or 'real teams', which are defined as "intact social systems whose members work together to achieve a common purpose. They have clear boundaries that distinguish members from nonmembers. They work interdependently to generate a product for which members have collective, rather than individual, accountability. And they have at least moderate stability, which gives members time to learn how to work well together" (Hackman, 2012, p. 437).

Consequently, our first goal is to identify five main challenges to create conditions for real teams' effective performance. These five challenges have been selected considering the team performance drivers identified in the most recent literature (e.g., Kozlowski, 2018, Kozlowski and Bell, 2015, Mathieu et al., 2017), and the current nature of teams and their embedding work and organizational settings: a) purposeful team staffing, concerning the need for a dynamic approach to team "reality" (e.g., Cronin et al., 2011) and the importance of team members and team composition characteristics for effective team functioning; b) proper task design and allocation, referring to the extent to which the analysis of "real" team tasks and the embedding organizational structures need to be considered; c) task and interaction process functionality, related to the relevance of identifying team processes and their dynamic nature in "real" teams; d) adoption of an appropriate affective tone, regarding the need to contemplate emergent team states (e.g., mood) and their implication with team processes and performance; and e) suitable assessment or analysis of the relationship between team outcomes and the relevant effectiveness criteria within their context. We define each of the challenges and substantiate their impact on teams operating in real work settings.

Our second goal considers how the former challenges may be handled to transform its potential threat into an opportunity. To this end, we differentiate between "empowering" interventions that aim for improving and developing the positive aspects of teams in facing the five challenges analyzed; and "restorative" interventions seeking to redirect dysfunctional aspects of teams in the same challenges. These intervention sets consider the multiphasic model of team processes described in Marks et al. (2001); so, they can be used in the sequence of transition and action phases characterizing teamwork. By proposing both kinds of interventions we offer a toolbox to encourage researchers and support practitioners to design and use such interventions in teams performing in real work settings.

Our work contributes in three main ways to advancing the science of teams and management research. First, our five-challenge diagnosis and proposed toolbox may help in better addressing research questions and theoretical falsifiability using teams in the wild. Second, by identifying ways to turn threats that challenges entail into opportunities when working with teams in real work settings allows us to assess how extant theoretical knowledge is useful for teams in the wild, to provide fine-grained context-specific guidance to organizational managers and team leaders, and to forecast the future of intervening in teams within organizations. And third, in so doing we address research calls for naturalistic studies that bring teams in real work settings to the forefront of our concerns (Salas et al., 2008).

Further, we offer practitioners clarity and support regarding how teams enable their goal achievement, and to assess and intervene in teams by adjusting their internal functioning to contextual conditions and constraints. Being close enough to practice in developing practical knowledge, we provide an ample set of actionable suggestions around two complementary kinds of interventions to help teams, and their embedding organizations, to work effectively and transform the challenges derived from ongoing work settings changes into opportunities.

Diagnosis: Identifying Team Challenges in Real Work Settings

First challenge: purposeful team staffing

Team staffing has motivated enormous research interest because is considered a critical team performance driver (Hollenbeck et al., 2006; Morgeson et al., 2005). Team staffing consists in screening team members to determine the team composition (team members' characteristics and attributes combination) ensuring team effectiveness (Morgeson et al., 2005). As a second order variable, team composition originates from the combination of first order variables such as knowledge, skills, abilities and other team members' traits (KSAOs), like personality, attitudes or values (Mathieu et al., 2014).

Team composition is an initial necessary condition for ensuring effective team members' execution (Salas et al., 2008), and the emergence of affective and motivational states, behavioral processes and cognitive states (ABCs of teamwork) critical for team effectiveness (Bell et al., 2018; Salas et al, 2008). From the condition-focused approach posit by Hackman (2012), team composition (i.e., *right people*) can be viewed as one of the main conditions (not causes) under which teams chart their own courses to effectively perform. However, team composition is not a sufficient condition because teams in the wild should consider the influence of the embedding organizational context's uniqueness (Salas et al., 2004). Thus, team composition must fit both the context embedding the team and the team's task characteristics (e.g., task interdependence levels), while delivering team's expected results.

From a strategic human resource management approach, team staffing may adopt two main forms: a) selecting individuals to make up a team (team lifts); and b) incorporating a whole pre-existing team (cluster hiring) into the organizational context (Munyon et al., 2011). The impact these team staffing forms may have on team composition will depend on the amount of team members or whole teams being substituted, subtracted, or added as a result of organizational mergers, restructuring, downsizing or redesign (Mathieu et al., 2013). Despite their potential clear benefits, team staffing decisions shall consider five main potential threats to reduce their latent cost regarding changes in organizational demographics, human capital and organizational strategy: 1) oversimplifying team staffing and its differences with individual selection processes; 2) deciding the kind of individual characteristics to be considered when assessing team members; 3) ignoring time effects and team development issues; 4) overlooking the kind of organizational structure accommodating teams; and 5) neglecting the way team composition will impact team diversity.

First, team staffing can't be oversimplified and reduced to a mere extension of individual selection processes for five main reasons (Zaccaro & DiRosa, 2016): a) team staffing requires a precise definition of two types of knowledge, skills and abilities (KSAs): KSAs fostering both individual and team taskwork to attain effective task performance, and those required for effective teamwork that include both interpersonal and self-management KSAs (Cannon-Bowers et al., 1995; Stevens & Campion, 1999). b) Staffing for teams in real work settings needs to consider how the required task and team KSAs will combine between team members (i.e., interpersonal fit), and how all team members will blend as a whole (i.e., collective fit). c) The team's temporal cycle (i.e., short-term project team vs. long-term team) should also be considered when deciding which competencies are required, that is: task and team context-driven, task contingent, team contingent or task and team transportable competencies (Cannon-Bowers, et al., 1995). d) Work settings create pressures on team members, frequently increasing team standardization, which leads to poor or even dysfunctional team processes due to the homogenization of skills, extant conflicts or negative experiences among team members (Zaccaro & DiRosa, 2016). And e) previous team members' common experience and knowledge may shape their collaboration for better or worse (Mathieu et al., 2013); hence, the mnemic trace of the team is made up of possible resentments, rivalries, and distrust (or their positive counterparts).

A second potential threat is the identification of the individual characteristics to be assessed: either deep-level variables, such as personality traits, values, and abilities (general mental ability and emotional intelligence –Bell, 2007); or attributes directly related to KSAs, such as learnable behaviors or mental abilities (Aguado et al., 2014; Stevens & Campion, 1999). In this regard, empirical evidence offers more support to assessing task and team KSAs, as these are consistently related with team effectiveness (Aguado et al., 2014; Hollenbeck et al., 2003; Stevens & Campion, 1999). However, extant literature has shown

that assessing personality characteristics have superior selection validity in teams operating in real work settings than lab teams (e.g., Halfhill et al., 2005). Therefore, both individual and teamwork technical KSAs should be assessed to predict performance in teams in the wild. Finally, in case of an internal team staffing process involving personnel hired using an individual assessment logic, their teamwork preference should be measured (Hollenbeck et al., 2003).

A third potential threat for teams staffing in real work settings is disregarding time effects and team development issues, whilst extant research highlights its relevance in the wild (e.g., Mohammed et al., 2009; Tannenbaum et al., 2012). When deciding on the competencies required for selecting team members it should be considered the team's developmental moment, which stage of the team project is transiting and the relative importance of skills depending on the role played by each member (Cannon-Bowers et al., 1995; Mathieu et al., 2014). In addition to this, the initial team composition should be considered as a departing point, given that team member relationships, the way in which KSAOs evolve along time (learning, routinization or obsolescence) and team results are likely to alter (positively or negatively) the effects of the initial composition (Arrow & McGrath, 1995; Mathieu et al., 2014).

The fourth and last potential threat for teams staffing concerns its impact on team diversity. Extant literature identifies two main types of diversity: a) demographic or social diversity, which is relative to a social category or belonging to a group because of a shared characteristic (e.g., gender –Clair et al., 2005), and b) functional diversity, which refers to characteristics that define what a person is capable of (e.g., knowledge); values, beliefs and attitudes; and personality characteristics, or cognitive, emotional and behavioral tendencies (Schneider & Northcraft, 1999). The effects of team composition on team diversity have not been acknowledged enough, because teams in real work settings tend to believe that diversity

is naturally beneficial to their performance (Bowers et al., 2000, Hollenbeck et al., 2004). However, empirical results show that greater diversity does not lead to better team performance, and that functional diversity is more important for team performance than demographic diversity, especially over time (Bell et al., 2011; Hollenbeck et al., 2004). In addition, the effects of team diversity on team performance are mediated by different team processes (e.g., negatively mediated by team reflexivity, and positively by task conflict and team learning –Roberge & Van Dick, 2010; van der Vegt & Bunderson, 2005), and contingent on the type of team.

In any case, teams in real work settings often view team diversity as an objective variable, neglecting that team members actively construct representations of such diversity, leading to subgroup formation or team faultlines (Antino et al., 2019). In this regard, the literature is consistent in showing that perceived subgroup splits have a curvilinear (inverted U) relationship with team performance, with high and low levels negatively affecting team outcomes (e.g., Gibson & Vermeulen, 2005; Lau & Murnighan, 1998; Rico et al., 2007). In short, the potential threat for teams regarding diversity is treating diversity superficially without considering the differential effects of team diversity attributes, the type of team, as well as team members' perceptions regarding their diversity.

Second challenge: proper task design and team allocation

Team staffing is just a starting point, since a suitable task for a team can be carried out in several ways. The second challenge faced by teams in real work settings is therefore the way their task is designed to reduce process losses and enhance team effectiveness. Team design depends on purpose, a powerful enabling condition. From the condition-focused approach (Hackman, 2012), a compelling team purpose energizes team members, guides and motivates them toward their collective goal, and enhances their task engagement. Team task design is a key element of team structure (Cohen & Bailey, 1997; Ilgen et al., 2005) and

should motivate team members to fully apply their skills and find meaning in their efforts (Hackman, 1987). In this regard, extant literature shows that task design providing reasonable levels of autonomy and continuous feedback to the team is a good starting point (Hackman, 1987; Stewart, 2006; Stewart & Barrick, 2000). The effects of team task autonomy on team performance operate through motivational, informational (distributing information among team members) and structural processes (improving the alignment of task and teamwork – Langfred & Moye, 2004). Hence, the challenge in designing team tasks resides in reaching an optimal combination of team members and team autonomy (e.g., van Mierlo et al., 2007). A combination that positively impacts team performance, despite task interdependence moderates such impact (Langfred, 2005). Accordingly, teams with high task interdependence perform better under high levels of task autonomy, but perform worse with high individual task autonomy; a pattern that is inverted when teams have low task interdependence (Langfred, 2005). Thus, a first potential challenge when designing teams' tasks in real work settings is considering both team and individual task autonomy in conjunction with team task interdependence.

Beyond autonomy, the other two basic elements when designing a task for a team are meaningfulness and intra-team coordination (Stewart, 2006). Meta-analytical results show that team-level task meaningfulness presents a very modest positive relationship with team performance, but its relevance is contingent on the nature of the context surrounding the team. Regarding intra-team coordination, results show that in teams in real work settings, increased coordination is positively related to team performance, particularly for knowledge-based team tasks (Stewart, 2006). In sum, a second potential challenge for designing team tasks resides in overlooking the importance of intra-team coordination and task meaningfulness, especially for knowledge-based work teams.

Moreover, Wageman (1997) identified two further challenges when designing tasks for teams. The first is creating a "team-in-name-only" (p. 55), grouping employees as a "team" without altering the nature of the individual work they are doing. The second is creating hybrid tasks that require individual work and occasionally teamwork. This simultaneously generates different levels of task and goal interdependence (Wageman, 1995) potentially yielding to situations of incongruent complex interdependence (i.e., high task interdependence but low goal interdependence, or vice versa —van der Vegt et al., 2001). When complex interdependence is incongruent team members are less satisfied and experience increased levels of conflict; whereas when it is congruent (e.g., high task and high goal interdependence) team members are more satisfied (van der Vegt et al., 2001; Wageman, 1997).

An additional challenge in designing team tasks is to maximize the connection between task and teamwork activities (Ilgen, 1999). The importance of these two factors must be considered in the light of autonomy and interdependence levels, as well as from the configurations rendered by team structure (Rico et al., 2011). In this regard, Crawford and LePine (2013) defined several kinds of team functioning networks (i.e., simplex taskwork and teamwork ties, and multiplex taskwork-teamwork ties), which create different configurations for taskwork and teamwork functioning networks. In this regard, it is very important for teams in real work settings to create a solid foundation for taskwork tracks (i.e., team charters) and teamwork tracks (performance strategies) during team development, especially in the early stages (Mathieu & Rapp, 2009). Further, Mathieu and Rapp (2009) showed that high-performing teams simultaneously displayed quality of team charters and high-quality performance strategies. The consideration of these factors connects with other challenges for teams related to task and interaction processes, which are analyzed in the following section.

A final challenge when designing team tasks is enabling the team to minimize errors or to detect them early. In this regard, research on teams in real work settings (e.g., military aviation crews) identified different team task dimensions (Bowers et al., 1994; Sanchez & Levine, 1989): a) the importance of training a specific task while considering other tasks to be done; b) task criticality, or the degree to which task failure has negative consequences; c) task frequency, defined as the number of times a task should be done compared to other team tasks; and d) the relevance of the task in the team work context. From these dimensions task importance and task criticality have received prominent attention because both determine the potential consequences of team errors when performing team tasks (Arthur et al., 2005). In conclusion, teams in real work settings face a potential threat when designing their tasks due to their limited capacity to detect failures and errors, a threat aggravated by the associated task criticality.

Third challenge: task and interaction process functionality

A common way to comprehensively describe team processes is to group them according to the moment of occurrence when teams perform their tasks. Accordingly, Marks et al.'s (2001) multiphasic model of team processes describes team tasks as a collection of performance episodes articulated by sequences of transition and action phases, which set the pace for team performance along time. Transition phases prepare teams for performance, either preceding (analyzing the common goals, establishing plans and strategies and structuring the task accordingly) or following action phases (reflecting over performance, analyzing feedback and reformulating plans and strategies –Marks et al., 2001). So, planning is a critical processes enabling teams' performance (Stevens & Campion, 1994), because its relevance on preparing and guiding the team along action phases, fostering coordination and interpersonal processes (Fisher, 2014). Marks et al.'s (2001) model identifies three kinds of team planning: deliberate, contingent and reactive. Deliberate planning refers to an up-front,

primary course of team action, whereas contingent planning refers to backup plans. These two kinds of planning occur during transition phases. Reactive planning occurs during action phases and helps teams to adapt their plans according to task changes (DeChurch & Haas, 2008; Marks et al., 2001). Considering the effects of such team planning alternatives, DeChurch & Haas (2008) found that team effectiveness was determined by reactive adjustment rather than by contingent and deliberate planning.

Overall, team planning positive affects team performance and goal attainment (e.g. LePine et al., 2008; Mehta et al., 2009). However, the degree of task complexity, and interdependence, and the quality of the plan itself enhance the effects of team planning on performance (Weldon et al., 1991). Consequently, a potential threat for teams in real work settings resides in overseeing the advantages of reactive planning and the moderating variables enhancing overall planning benefits.

Another potential challenge is the creation of dysfunctional processes in teams, caused by affective, behavioral and cognitive states. We will now deal with the potential dysfunctional effects of behavioral and cognitive states, leaving affective states for the next subsection. Behavioral causes of dysfunctional processes might originate in dysfunctional behaviors (observable employee behaviors intended to impair team functioning –Cole et al., 2008), which may harm other team members, impair both task and team processes, negatively affect team goals and effectiveness, and even breach organizational and social norms (Cole et al., 2008; Priesemuth et al., 2013). In addition, dysfunctional behaviors may spread between team members, creating a spillover effect, and even being accepted and justified as an appropriate reaction to the treatment received by the organization (Cole et al., 2008).

Counterproductive work group behaviors also are dysfunctional team behaviors (Priesemuth et al., 2013), which can be of two types: interpersonal deviance, or deviant acts intentionally directed at another teammate (violence, gossip, or threats); and self-serving

political behaviors, or social influence attempts aiming to manipulate other team members to gain self-serving benefits (Priesemuth et al., 2013). In any case, dysfunctional team behaviors shall be considered from a multilevel stance, as on top of bad apples spoiling barrels, there are also (team and organizational) bad barrels spoiling apples (O'Boyle et al., 2011).

Ironically, there are also positive behaviors with unintended dysfunctional consequences. Hence, backing-up behaviors may turn dysfunctional and hinder social and task team outcomes when helping team members disregard their own tasks (particularly when they are critical for team effectiveness), when backing-up behaviors become redundant instead of complementary for the team (Porter et al., 2003), or when the support from their peers make team members decreasing their effort in subsequent tasks, especially when teammates cannot easily detect their workload (Barnes, et al., 2008).

This last effect closely relates with social loafing, defined as the effort reduction of one or more team members when they work as a team, in comparison to the effort made when they work individually or in co-action tasks (Karau & Williams, 1993). Although social loafing behaviors are likely when team size increases and team cohesion decreases (Liden et al., 2003), empirical evidence shows that evaluation potential, task valence, co-worker performance expectations and performance uniqueness, culture, and task complexity moderate its occurrence (Karau & Williams, 1993). In teams performing in work settings, social loafing may increase when one or several members try to avoid the sucker role, try to look very competent or very incompetent, and when they perceive task dispensability or lack of influence over task team outcomes (Comer, 1995). From the condition-focused approach (Hackman, 2012), clear team norms constitute another core enabling condition. When teams count with clear, well-enforced norms of conduct, the amount of time invested in monitoring member behavior is greatly reduced. This fact frees team capacity to better scan team processes and performance setting (Hackman, 2012), which helps reducing the occurrence of

social loafing. In any case, not all social loafing effects are threats to teams: extant research reports that team member perceptions of co-worker loafing is associated with reduced social loafing, which seems to point to a social compensation effect (Liden et al., 2003). Similarly, social loafing trends are offset when a high degree of conscientiousness and agreeableness occurs in the team, and in this way team performance is not altered (Schippers, 2014).

Finally, regarding cognitive causes, research has been built around the potential dysfunctional consequences for teams of groupthink and teamthink (Neck & Manz, 1994), and information-processing failures (Schippers et al., 2014). Departing from the "groupthink" and the "thought self-leadership" concepts (Janis, 1983), Neck and Manz (1994) propose the concept of teamthink to refer to certain collective thought patterns that may affect self-managed team outcomes in a constructive way. The use of such thought patterns may enhance team effectiveness through improving team performance and decision-making quality. Considering self-managed teams' tendency to be highly cohesive, the risk of groupthink is high (Manz & Neck, 1995). Thus, to avoid a reduction of critical analysis and information search, and increased pressure on thoughts and attitude convergence that impairs team decision quality, teams in real work settings need to counteract this threat by using teamthink and an optimal trust levels (i.e., balance between trust and distrust –Manz & Neck, 1995).

Dysfunctional team processes can induce intra-team conflict (i.e., task, relationship, and process conflict) and constitute a threat for teams' performance and effectiveness (Jehn, 1995). Despite the abundant research on these three kinds of conflict, the available meta-analyses reveal disparities in the results. For example, De Dreu and Weingart (2003) reported a strong negative correlation between task and relationship conflict, team performance, and team member satisfaction, and that both team conflicts had stronger negative relations with team performance in highly complex tasks than in less complex tasks (e.g., decision making vs. production). Meanwhile, De Wit et al. (2012) reported a positive relationship between task

and team conflict and performance, which was strengthened when the association between task and relationship conflict was weak, when it occurred in top management teams, and in teams where performance was measured as decision quality outcomes or financial performance.

Fourth challenge: appropriate team affective tone

Pursuing team outcomes at the expense of team affective tone will harm team effectiveness in the middle and long term (Barsade & Knight, 2015). As such, another challenge that teams in real work settings face is leveraging team members' positive and negative affectivity to enhance team's affective tone ("consistent or homogeneous affective reactions within a team" –George, 1990, p. 108). Because it results from team member interactions, team affective tone is genuinely dynamic, resulting not only from aggregating each team member's affectivity –positive or negative– but also from the relationships between them (Cronin et al., 2011).

Positive affective tone is important to teams as it reduces conflict and absenteeism, while improving team coordination, OCBs and performance; in contrast, negative team affective tone induces intra-team conflict, reducing pro-social behaviors and performance (Collins et al., 2013). In addition, negative team affective tone induces threat rigidity, which reduces cognitive and behavioral flexibility and team members' responsiveness, really needed to identify and cope with threat sources (Edmonson, 1999). These general results cannot be extrapolated to any kind of teams, as available evidence shows the moderating role of task type (Collins et al., 2013). In this way, for teams performing creative tasks positive team affective tone increased team creativity only when team trust was low, but negative group affective tone was high; high team trust combined with high positive team affective tone increases complacency and reduces team self-criticism (Tsai et al., 2012). In this same task context, Shin (2014) and Shin et al. (2016) found that positive team affective tone induced

team reflexivity and team promotion focus, which in turn led to team creative performance and OCBs.

Another related threat impacting teams affective tone is the leader's mood influence (Barsade & Knight, 2015). Research shows that when team leaders are in a positive mood teams also exhibit a more positive affective tone and greater coordination, and members expend less effort in their tasks compared to when the leader is in a negative mood (Sy et al., 2005). Similar effects were found by Walter and Bruch (2008) regarding the positive effect of charismatic leadership on the creation of positive team affective spirals, a process which is sensitive to factors such as strong organizational identity and other organizational context facets (e.g., subgroups' cynicism) which may very well reduce positive affective reciprocal spirals. In short, the available evidence indicates that team positive affective tone facilitates the achievement of both individual and team outcomes (Barsade & Knight, 2015). By contrast, negative team affective tone impair individual and team outcomes. However, negative team affective tone is sensitive to contextual contingencies that can lead to positive outcomes (Barsade & Knight, 2015), as mentioned above regarding team trust.

In closing this point, we draw from early team research considering how the continued team member's interactions crystallize in stable patterns of relationships and norms, articulating its processes and structure during the initial phases of team activity (Sherif & Sherif, 1969). Up to now, research has been scarce regarding how and when subsequent emergent states crystalize into more stable elements characterizing and patterning team processes in more advanced phases of team development. Considering that team affective tone may have very negative consequences, a clear potential threat for teams operating in real work settings is the difficulty to identify when these emergent states taint team processes, which will then become crystallized.

Fifth challenge: suitable team evaluation

The final challenge we identified for teams in real work settings is the extent to which teams engage in evaluation activities, for their critical value and their ties with team effectiveness (Salas et al., 2017). Team evaluation is key to address how teams produce results and reach relevant goals for the team, the organization and third parties (e.g., clients). Essentially, team evaluation encompasses assessing individual and team processes and outcomes (Smith-Jentsch et al., 1998) which are directly linked to team effectiveness, either directly or through benchmarking to a standard. Hence, to ensure accuracy, team evaluation must match team outcomes with the correct measurement methods (Rosen et al., 2012; Salas et al., 2017). In so doing, team evaluation measurements in teams performing in real work settings should (1) be designed to focus on team processes and outcomes, (2) meet a specific goal or set of goals, and (3) be linked to the specific organizational context (Andersson et al., 2017). In addition, team evaluation should focus on attitudes, observable behaviors and cognitions (ABCs), and capture multiple levels of performance (i.e., individual, team, and organizational –Salas et al., 2017).

A first element team members and managers should establish is whether the performance appraisal target involves team members and/or the whole team. Scott and Einstein (2001) highlighted the need for considering first, the kind of team, regarding its task complexity levels, and its composition. Second, they emphasized the importance of identifying who qualifies to accurately assess the team and its members, and if the assessment is going to be either externally (e.g., customers) or internally (team members monitoring) conducted. A third consideration is to determine what is being assessed (e.g., outcomes). And finally, it should be determined whether the assessment purpose is development, evaluation or self-regulation (Scott & Einstein, 2001).

Identifying team performance dimensions and team effectiveness main contributing factors help teams to focus on key elements that both in terms of processes and outcomes,

contribute to their excellence. In this regard, recent Kozlowski's (2018) taxonomy capturing core team processes and emergent states contributing to team effectiveness is extremely useful. This taxonomy classifies team processes into cognitive (team climate, team mental models, team transactive memory, and team learning), motivational-affective (cohesion, efficacy, and potency; affect, mood, and emotion; and conflict), and behavioral categories (team member competencies and knowledge, skills, and abilities (KSAs), coordination, collaboration, communication, and performance regulation and adaptation). This classification reveals the importance of monitoring these team processes sets in teams in real work settings so that, considering their tasks, goals and operating context, they maximize team effectiveness.

An important question when referring to team evaluation is to establish clear team effectiveness criteria. In this regard, Mathieu and Gilson (2012) classify team effectiveness criteria into tangible outputs and members' reactions. Tangible outcomes can be of three kinds: productivity, efficiency and quality, while members' reactions can be distinguished as team level members' reactions (i.e., emergent states) and individual-level reactions (i.e., attitudes, reactions, behaviors, and personal development). Mathieu and Gilson (2012) highlight the importance in teams in real work settings of using team assessment methods contingent upon the task and team context.

A potentially useful process to reduce performance assessment threats in teams is team reflexivity, or the extent to which team members overtly reflect upon the team's objectives, strategies, and processes and adapt them to current or anticipated internal or external conditions (West, 1996). In teams performing in real work settings, team reflexivity has shown its capacity to improve innovation (Schippers et al., 2015), counteracting the negative effects of team orientation diversity on team performance and information-processing failures (Schippers et al., 2014), and on team effectiveness (Widmer et al., 2009). Despite its benefits,

team reflexivity should not be used as an omnibus assessment strategy for any kind of team (Moreland & McMinn, 2010); its positive effects on team learning and performance are sensitive to the temporal character of team functioning in real work settings.

A final element potentially counterbalancing teams' challenges regarding self-assessment or self-reflection is the existence of a team climate for psychological safety, created mainly by leaders (Edmonson, 2003). Team members' psychological safety fosters teamwork and team learning, by enabling team reflexivity processes regarding both, the task and the team (Edmonson, 1999; Edmonson & Lei, 2014). In addition, psychological safety promotes open discussions, error assumption, feedback seeking, and seeking assessment alternatives. In this way, psychological safety transforms threats associated to team errors into opportunities to enhance team reflexivity and learning conductive to team effectiveness (Carmeli & Gittell, 2009). In sum, psychological safety prevents teams from feeling infallible and inadvertently become trapped in self-complacency.

Up to here we have summarized the main team challenges that real teams currently suffer, and the threats they entail for their effective functioning (please, see Table 1). Our intention with this effort is to be in a more solid foot to tackle how such set of challenges could be managed to transform their potential threat into both practical developmental opportunities and research prospects.

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Treatment: crafting a toolbox for team interventions

Our proposal focuses on team interventions, which we differentiate from team development programs on two major lines (Barner, 2006). On the one hand, team interventions use a problem-solving approach to enable teams operating in real work settings

to identify and cope with any obstacles impairing their performance. Team interventions include but are not limited to team-building interventions (e.g., role clarification –Salas et al., 1999). On the other hand, team development programs adopt a training approach using simulations and feedback to help their members to develop the necessary team and task competencies to enhance certain attitudes and modify some behaviors, to reach a high level of team performance (Barner, 2006; Diaz Granados et al., 2017). Extant literature on team development effectiveness has been extensively analyzed (e.g., Cannon-Bowers & Bowers, 2011; Lacerenza et al., 2018), and therefore we will focus herein exclusively on team interventions.

Our approach to team interventions differentiates between "empowering" and "restorative" interventions. Empowering interventions are grounded on the dual structural and psychological perspective of team empowerment proposed by Mathieu et al. (2006). According to this perspective, members' perceptions of organizational and teamwork design features (contextual and structural factors) result in team members' empowerment (psychological factor), conductive to team performance processes and their subsequent effectiveness (Mathieu et al., 2006). Thus, by using "empowering interventions" we intervene over team members' shared perception about the collective level of team empowerment (Chen et al., 2007).

Restorative interventions mimic the reactive approach of restorative practices applied to conflict management (e.g., Zehr, 1995) by openly treating issues, enhancing collaborative learning and restoring interpersonal trust. Restorative interventions can take place in a self-managed or externally managed way (i.e., external consultant). We aim to extend this approach to teams in real work settings interventions in a similar fashion to its application to leadership with the "horizontal management" concept (Denton, 1998), or to justice processes (Costello & O'Connell, 2002). Accordingly, we structure our suggestions for coping with the

five main challenges identified above from empowering and restorative intervention logic, respectively. Please, see Table 2 for an overview.

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Additionally, to increase the actionability of the proposed team-based interventions, we exemplify in Figure 1 which kind of teams could take more advantage of the different interventions. To connect both kind of interventions and types of teams, we use Hollenbeck et al.'s (2012) Dimensional Scaling Framework that identifies three structural dimensions (ranging from low to high) to describe teams: a) *skill differentiation* (the structure that dictates who performs various tasks assigned to the team); b) *authority differentiation* (the structure that dictates who has decision-making authority when team members disagree about task assignment); and c) *temporal stability* (the short or long-term nature of the structural linkages, and, therefore, to the way in which over time they affect the temporal stability of team membership). Please, note we don´t aim to be prescriptive nor exhaustive in here, just offer complementary guidance that should accompany the necessary assessment of the team to be intervened.

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Empowering interventions

We articulate different empowering interventions addressing the challenges discovered in our diagnosis, with the intention to better serve currently active teams with some experience as a team, rather than for newly formed teams.

Team staffing

These interventions may be directed to intact teams (permanent, full time members) or project teams and task forces (temporary, part-time members –Barner, 2006). Intact team interventions will target the whole team and its leader regarding the need to change or

incorporate team members, either temporarily or permanently (Arrow & McGrath, 1995), while temporal team interventions are centered on the eventual incorporation of newcomers for spot tasks or until the project ends. In both cases, for these interventions to succeed, it is essential to grant enough support and autonomy for the team to undertake its compositional changes. For instance, in terms of Hollenbeck et al.'s (2012) Dimensional Scaling Framework, team staffing interventions would be appropriate for teams with either high and low Temporal Stability, such as ongoing/intact teams or short-term advice teams respectively (see Figure 1).

Interventions focused on membership changes for intact teams shall consider the potential negative impact on team performance of newcomers' lack of abilities or skills, team mental model sharedness and transactive memory systems malfunction (Levine & Choi, 2004). If changes are implemented considering frequency and intensity recommendations regarding the kind of team task (Arrow & McGrath, 1993), and if newcomers are competent and positively influence old-timers (Choi & Thompson, 2005), teams should find their performance and effectiveness enhanced.

Meanwhile, in dynamic organizational contexts, characterized by team-based flat organizational structures, with high task interdependence and complexity, our suggested interventions shall be focused on transforming traditional teams into *X*-teams (Ancona & Bresman, 2007; Ancona et al., 2002). *X*-teams are typified by "external activity, extensive ties, expandable structures, flexible membership and internal mechanisms for execution" (Ancona et al., 2002, p. 34). Forming this kind of teams follows the common tri-phasic pattern (i.e., team staffing, team building, and the creation of a supportive organizational context), ensuring on each phase internal communication openness and access to information, fluid composition, explicit goal setting, a learning culture prevalence and high connectivity between team members and their environment (Ancona et al., 2002). According with

Hollenbeck et al. (2012), *X*-teams interventions are appropriate when the team has high Skill Differentiation, low Temporal Stability, and a medium to high level of Hierarchical Differentiation (see Figure 1). Each organization shall assess the strategic pertinence within its structure of forming *X*-teams and their ratio to traditional teams.

Task design and team allocation

A key intervention for empowering teams is increasing their autonomy (Langfred, 2005; Mathieu et al., 2008; Stewart, 2006). In any organization, team managers should carefully assess the maximum level of autonomy to grant their teams, negotiating with them how autonomy will be assumed. These interventions should take place whenever the need for greater autonomy is detected, and not only after delivering results. Interventions in autonomy are especially useful for seasoned and experienced teams that have demonstrated their high capacity and performance. The effects of interventions augmenting team autonomy will be more pronounced when team members possess high levels of teamwork KSAs; in this case, the benefits also raise team performance and reduce member job strain (Leach et al., 2005). Further, when interventions in autonomy are combined with ongoing performance feedback, both goal saliency and team effectiveness increase (Gonzalez-Mulé et al., 2016). In terms of Hollenbeck et al.'s (2012) Dimensional Scaling Framework, these interventions would be recommended for teams with low Authority Differentiation, such as self-managing teams.

A second key intervention is goal setting. Team members engage and actively participate in defining team goals, how to reach them and the way in which both individual and team goals are integrated and reciprocally reinforced (Salas et al., 1999). Goal setting interventions allow teams to discuss both goal content and goal specificity (Locke & Latham, 1990). Considering the motivational potential of team member defined goals (Locke & Latham, 2002), this kind of intervention will positively impact team performance. However, interventions in teams performing in real work settings must always consider team

particularities (e.g. virtuality, or multi-team imperatives), as these will impact team member goal setting willingness and acceptance; how environmental or temporal stress levels will require more specific/global goals; or how team leaders may integrate individual and team goals with organizational goals (Kramer et al., 2013). Goal setting interventions would have a greater omnibus character and could be applied to a high variety of teams and organizational contexts. Despite of that, they seem highly recommendable for teams with a medium-high temporal stability, such as long-term project teams (Hollenbeck et al., 2012).

Task processes

One of the most important task processes interventions, which frequently integrate team-building efforts (Salas et al., 1999), is role clarification. Role clarification highlights how the quantity and quality of team members communication define each team member role, its responsibilities, and interdependencies with other roles. Such information allows team members to negotiate their roles and reduce role ambiguity (Klein et al., 2009), and fosters high levels of implicit coordination (Rico et al., 2008). Extant evidence shows that specific interventions emphasizing role clarification predict notable increments in team performance (Day et al., 2004; Salas et al., 1999). According with Hollenbeck et al. (2012), role clarification interventions are appropriate when the team has medium-high levels of Authority Differentiation and Temporal Stability; for example, in hierarchical decision-making teams and traditional work teams (see Figure 1).

Another common intervention is problem-solving, which identifies team tasks issues (Klein et al., 2009). In doing so, team members engage in proposing and planning improvement actions, identify realistic solutions to the problems detected, assess the quality of such solutions, and implement them (Salas et al., 1999). Though this intervention may empower teams by increasing problem awareness and requiring team members to search for solutions that improve task processes, empirical results show that problem-solving

interventions and team performance and effectiveness are seldom related in real work settings (Klein et al., 2009; Salas et al., 1999).

An additional team empowering intervention is related with improving team adaptability; which is the team's capacity to obtain and process information from the task and its context and use it to modify its performance by means of altering task behaviors, cognitive actions, role structure and interactions, strategies and resource allocations (Burke et al., 2006; Cannon-Bowers et al., 1995). This capacity is the antecedent of team adaptation, or the adjustment of team processes relevant to performance (i.e., action, interpersonal, transition) in response to the disruption or changes triggering the need for adaptation (Maynard et al., 2015). Team adaptability interventions are mostly recommendable during transition phases (Marks et al., 2001) as they engage teams in gathering information about the performance environment and carry out the necessary functional adjustments for the next action phase. In addition, team adaptability interventions enhancing team monitoring capacity may increase team adaptation if the team is able to use reactive adjustment planning when unexpected task changes occur (Marks et al., 2001; Randall et al., 2011). Likewise, it is crucial to consider teams' composition, insofar as team adaptive capacity may very well be diminished by team member characteristics such as low cognitive ability, achievement, openness and higher dependability (LePine, 2003). Although team adaptive capacity interventions could be applied across a broad range of teams and organizational contexts, they seem highly recommendable for teams with a medium-high Temporal Stability and high Skill Differentiation, such as cross-functional teams, extreme action teams, and long-term project teams (Hollenbeck et al., 2012).

A last team empowering intervention may be used to prevent motivational or social loafing problems. From a social identity approach, this intervention aims to increase team identity perceptions. To do so, shared and accepted clear goals by all team members is

recommended; goals whose achievement requires high task interdependence and long-term orientation, that strengthen the salience of internal and external team identity (even requiring benchmarking with teams in the same or similar organizations –Van Dick, Stellmacher et al., 2009). Belongingness, team pride, a strong shared identity and a common fate will directly increase team cohesion and team viability (Salas et al., 2015; Van Dick, Tissington et al., 2009), and indirectly, team performance and effectiveness.

Affective team processes

Teams may experience a negative affective tone derived from team member relationship or task process difficulties. In this case, a recommended empowering intervention builds on the dual-tuning perspective on affect in teams (George, 2011), aiming to ameliorate team affective tone, and specially induce team learning about the positive value of negative emotions experienced. Not always is positive affect good and negative affect bad for team performance (Collins et al., 2015). Both negative and positive affect are adaptive for different reasons, and their functional effects combined enhance team performance and effectiveness (George, 2011). A dual-tuning approach to affect induces healthy team questioning over complacent positive emotional states, by engaging in searching for causes of negative emotional states and looking for potential solutions. This kind of intervention enable teams to acquire an optimal team affective tone, avoiding either positive or negative excess (naïve or destructive, respectively), setting up instead a balanced mechanism similar to what we described as "optimal trust" (Stevens et al., 2015). This intervention has a versatile character and it is applicable to different types of teams, but it can be more indicated in teams with medium-low levels of Authority Differentiation and medium-high levels of Temporal Stability (Hollenbeck et al., 2012); such as rotated leadership teams and ongoing/intact teams, respectively (see Figure 1).

A competitive climate, characterized by relational conflicts, may decrease intra-team trust, increase team conflict and impair cooperation and team performance (De Jong et al., 2016). Intra-team trust is sensitive to past experience and relationships, is impacted by both surface and deep-level cues (Wildman et al., 2012) and by organizational climate and work environment, as well as by communication patterns and task interdependence levels (Rico et al., 2009). Although high levels of trust positively impact team effectiveness (De Jong et al., 2016), very high levels of trust may induce team complacency, reducing monitoring, cooperation, communication and even teamthink (Langfred, 2004). As mentioned above, this empowering intervention will enable teams to calibrate their "optimal trust" levels (Stevens et al., 2015), avoiding either very low or very high levels of trust (associated to skepticism, exigency and opportunism, or to faith, favoritism, and contentment, respectively). This intervention would assist teams to initiate either reorientation processes when major deviations from optimal trust are noticed, or recalibration processes to prevent minor deviations (Stevens et al., 2015).

A final consideration regarding the above rationales is the antecedent role of trust in team psychological safety (Edmonson, 1999). Teams must be sensitive to detecting and identifying trust levels and intervene (either through reorientation or recalibration) to keep up optimal trust levels that enable and support team psychological safety.

Team evaluation

These interventions encourage teams to reflect on their viability, or their "capacity for the sustainability and growth required for success in future performance episodes" (Bell & Marentette, 2011, p. 279). Team viability assessment is considered a team effectiveness criterion (e.g., Hackman, 1987) because of its utility in enabling teams to analyze their team potency with a view to future task performance. This kind of intervention works better with permanent or long-duration teams, such as long-term project teams (Hollenbeck et al., 2012),

which have recursive performance cycles and deliver complete tasks, and also when teams need to cope with internal or external changes, e.g., new team members in fully cross-trained teams (Hollenbeck et al., 2012), aimed at increasing a work system's job flexibility (Slomp & Molleman, 2002). These interventions identify the main team viability antecedents, to enhance with spot actions those appearing weaker (e.g., reinforce feedback loops –Bell & Marentette, 2011).

A second kind of empowering intervention is endowing teams with non-obtrusive assessment tools that have enough diagnostic capacity, and easy to implement and use (Rosen et al., 2012; Salas et al., 2017). Unobtrusive assessment tools are not a burden for team members and prevent the alteration of their answers (Rosen & Dietz, 2017). In particular, sensors or sensor-based technologies (e.g., radio-frequency identification tags) present several advantages over traditional survey and observation methods, such as their automatic and objective character, and the fact that data is collected in real time (Rosen & Dietz, 2017). This intervention type provides teams performing in real work settings with much more reliable and valid feedback than that obtained from subjective assessments. In this way, non-obtrusive assessment information will be better accepted and more easily integrated in team functioning.

Restorative interventions

Paralleling the former section, we propose a set of restorative interventions to tackle the main five challenges identified in our diagnosis. Again, these restorative interventions suit better to seasoned teams than to newly formed ones.

Team staffing

When several team members perceive that one or more teammates are no longer responding to taskwork or teamwork requirements, an intervention shall clarify whether their team membership should continue or not; that is, an intervention that allows team members to

express their perceptions about the required staffing and the need to carry out team membership changes or adjustments. This intervention works better when some members are engaged in several teams, and may find it difficult to distribute among them their time, and efforts (Pluut et al, 2014; van de Brake et al., 2019), as well as in cross-functional teams, characterized by high Skill Differentiation (Hollenbeck et al., 2012).

A second restorative intervention works when teams experience strong imbalances between team members' contributions (Mathieu et al., 2013) and the influence they exert over the team. Then, it is necessary that team members and selected organizational representatives carry out an intra-team composition analysis and the right balance of team members' contributions over team outcomes. This intervention reveal whether the imbalance in team member contributions is due to individual behaviors (e.g., dominance), to emergent informal roles, or to the design of team's formal roles (Bell et al., 2018). If the problem is concerned with the roles, the intervention will also connect with the second challenge identified (i.e., task design and team allocation). This intervention will clarify whether the imbalance identified is temporal and justified (e.g., the necessary salience of an expert member in a particular task performance phase), or is derived from a structural problem, which will call for a redesigned team composition. According with Hollenbeck et al. (2012), intra-team composition analysis interventions are appropriate when the team has medium-high levels of Skill Differentiation, such as extreme action teams and cross-functional teams (see Figure 1).

Task design and team allocation

Teams may be threatened by inadequate perceptions of their taskwork interdependencies. A useful restorative intervention addressing this shall assess the team tasks "teamness", or team interdependence levels using tools such as Team Task Analysis Scales (Arthur et al., 2005) that include team relatedness and team workflow dimensions. The "teamness" level will be assessed by team members, their supervisors, and members of other

teams having interdependencies with the team receiving the intervention. Such task analysis will be more precise in identifying the degree to which tasks are individual, team or hybrid (Wageman, 1995, 1997), and raise team members' awareness of the importance of each task at different performance phases. Additionally, clarifying "teamness" levels will improve decisions regarding team-based rewards (high interdependence –Arthur et al., 2005), influencing team members' motivation and satisfaction.

The intervention described above may ground a second kind of intervention centered on the analysis of peer justice perception in teams (i.e., a shared perception regarding how team members without formal authority over each other judge the fairness with which they treat one another –Cropanzano et al., 2011). For instance, perceptions of imbalanced member contributions induce perceptions of low procedural peer justice, negatively impacting task processes. Team members' communication or interpersonal problems also reduce interpersonal peer justice and negatively affect interpersonal processes (Cropanzano et al., 2011; Li and Cropanzano, 2009). Concurrently, low peer justice perceptions in teams are relevant to team members' assessment and fulfillment degree of the psychological contract established between them (Alcover et al., 2017). Finally, this intervention on justice perceptions in teams enables the identification of team members who feel socially undermined by their teammates (Duffy & Lee, 2012), and clarify the treatment and quality of their relationships inside the team. As Figure 1 depicts, this kind of intervention works better for teams with high Authority Differentiation and medium level of Skill Differentiation; such as hierarchical decision-making teams and crews (Hollenbeck et al., 2012).

Task processes

Task processes may be negatively affected, and teams experience a performance-detracting conflict process when team members perceive low team interpersonal power congruence (i.e., the extent to which team members' self-perceptions of their power within

the team align with other team members' perceptions –Greer et al., 2011). Social comparison processes may induce perceptions of asymmetrical power (and resources) between team members. This could increase intra-team power sensitivity (i.e., the extent to which team members are aware of, and responsive to resources –Greer et al., 2017), and facilitate power struggles. An intervention that clarify perceptions of the amount of team members power over the team will reduce intra-team power sensitivity, lessen both interpersonal and task conflicts, and prevent power struggles. When intra-team power sensitivity is triggered by team members' perceptions about their leaders illegitimate and/or unfair use of power, the intervention shall assess team members' power distance preferences. This will inform team leaders about the degree to which power can be exerted, and to tune their attitudes and behaviors to better fit their team members' values (Cole et al., 2013). As in any restorative intervention, both team members and leaders need to begin by openly communicating their perceptions and experiences, showing a clear orientation toward constructively search for solutions. According with Hollenbeck et al. (2012), intrateam power sensitivity interventions are appropriate when teams have medium-high levels of Authority Differentiation, such as stable emergent leader teams and traditional work teams (see Figure 1).

A second restorative intervention aims to manage team members' power or status conflicts through negotiation and the implementation of a collective leadership, a multi-leader team (Denis et al., 2012) or in rotated leadership teams (Hollenbeck et al., 2012). A multi-leader team has multiple leaders with mutual influence among them, working together to reach a common goal (Dust & Ziegert, 2016). This intervention promotes team members open discussions about their goals and the processes needed to reach them, enabling an agreement on the multi-leader configuration that addresses the team operating context. The intervention will also include a self-analysis of team members' competencies and leadership abilities, the roles to be performed, and the task phase or the working context, facilitating the decision

regarding who will be the best team member to perform a leadership role (Dust & Ziegert, 2016; Hiller et al., 2006). Multi-leader team efficacy is contingent on the organizational context, and is enhanced in complex, innovative and knowledge intensive settings (Dust & Ziegert, 2016). Consequently, this kind of intervention shall account for the contextual characteristics of the team.

Affective team processes

These processes could be enhanced through intervention fostering team reflexivity, as a way to manage existing conflicts and identify its origin (task or relational) to prevent a negative emotional tone emergence (Collins et al., 2013). It could be highly effective in this regard that team members use perspective taking, to improve their comprehension of how teammates think, feel and behave in a particular situation. Perspective taking also enhances intra-team communication and enables team members to reproduce, explain and predict their teammates' affective responses. Systematically using perspective taking increase team's capacity to isolate task conflicts, preventing them from becoming relationship conflicts (Sessa, 1996). By increasing communication and understanding of teammates' reactions when experiencing conflict, this tool may restore interpersonal relationships, team affective tone and team members' problems to regulate their emotions. Perspective taking interventions would have a greater omnibus character, which make them applicable across different type of teams and organizational contexts. However, as Figure 1 shows, they may be more suitable for teams with medium-high Temporal Stability teams (e.g., long-term project teams), and with high Skill Differentiation (e.g., cross-functional teams –Hollenbeck et al., 2012).

A second affective restorative intervention proposes openly discussing and reflecting on team members' emotional regulation and expression, and the clarification of negative emotions generated by perceived threats to individual and team goals (Jordan & Troth, 2004).

This intervention may be facilitated by an external agent or could be self-administered by the team, if it is developed enough and has low internal conflict levels.

A third restorative intervention in affective team processes tackles the regulation of emotional expression. From the standpoint of emotions as social information (Van Kleef, 2009), team members' emotional displays have a high diagnostic value regarding team functioning: a value that increases when team circumstances are ambiguous (Homan et al., 2015). If negative emotions (e.g., sadness) are expressed, the perception of team capacity to cope with challenges may diminish, and increase when positive emotions are expressed. Thus, this intervention heightens team members' awareness about the importance of emotional regulation in relevant situations for team functioning and goal achievement. This will allow the social information provided by both positive and negative emotions to be treated in a constructive way, integrating the informative and adaptive value of expressing negative emotions (George, 2011).

Team evaluation

Team evaluation is always an issue in teams performing in real work settings, as members are often reluctant to appraise their performance, due to negative experiences or assessment apprehension. An effective intervention to reduce assessment apprehension in teams are after-action reviews, also known as after-event reviews or debriefings. After-action review is a feedback tool that systematically reviews team members' performance during recently completed tasks, task cycles, or performance events (Villado & Arthur, 2013). Such reviews may be conducted by agents external to the team (e.g., supervisors) and may be either subjective or incorporating non-obtrusive recording objective methods. After-action reviews have proven their effectiveness in team training settings (specially in military teams; Zakay et al., 2004) where both subjective and objective reviews increase team performance and effectiveness (Villado & Arthur, 2013). In this way, their use as a restorative intervention is

indicated when team members present higher levels of assessment apprehension; for instance, in traditional work teams characterized by medium-high levels of Authority Differentiation (Hollenbeck et al., 2012).

Teams may face discrepancies between self-assessment performance reports and behavioral scales, or assessments carried out by supervisors, users, clients or other relevant organizational agents. Although self and external assessments evidence similar results (Andersson et al., 2017), when the discrepancy is high in a particular dimension a reflective intervention is needed to identify and analyze its origin. This intervention could be also articulated as a debriefing session with other similar teams in the organization (or in a similar organization), so that each team can reflectively analyze its results and compare its assessment with other teams. This cross-feedback can be useful to every team in adjusting self and external assessments. In sum, interventions oriented to improving team reflexivity over assessment processes and their results could be effective for teams with recursive task cycles, or for permanent teams working on long-term projects (Hollenbeck et al., 2012). In addition, this intervention may be suitable in self-managing teams, with the aim of keeping their goals and team outcomes aligned with organizational goals and expected outcomes by top management.

Prognosis: the future of research and practice in teams performing in real work settings

This manuscript serves both scholars and practitioners in gaining clarity regarding five key challenges that currently jeopardize team effectiveness in real work settings. Five challenges addressable through collaborative research and intervention efforts. To move forward in this direction, we first synthesized extant theoretical knowledge and research results, presenting them according to an evidence-based management logic (Lacerenza et al., 2018). Then, we integrated the practical knowledge and propose two main types of interventions to support teams and their embedding organizations to enhance their

effectiveness, by transforming their challenges into opportunities. As such, our manuscript has several implications for research and practice that merit discussion.

Implications for research

Our diagnosis is structured around five main challenges for teams in real work settings (purposeful team staffing, proper task design and team allocation, task and interaction process functionality, appropriate team affective tone, and suitable team assessment), and it is aligned with current research considering that these challenges are dynamic entities with potential reciprocal, albeit asymmetrical, relationships with one another and with team effectiveness and outcomes over time (Mathieu et al., 2017). Such alignment between team challenges in real work settings and team research questions in academia will undeniably contribute to strengthening the science of teams. Extending earlier research efforts on team dynamics processes, which already identified different methodological and measurement challenges (Kozlowski, 2015), our work identifies practical and intervention challenges for teams in context.

Our piece pursues stimulating the design of naturalistic research studies from an action-research perspective. Studies departing from a solid theoretical grounding in team dynamic processes to support field experiments and interventions implementation, whose results will feedback existing theoretical models. Studying the new breed of teams in changing organizational settings will enrich both theory and research by updating our knowledge of teams processes and outcomes in real work settings. Such updating process will better define evidence-driven practices supporting the staffing, formation, development, leadership and management of teams in complex organizational contexts (Tannenbaum et al., 2012). Further, such accumulated knowledge will give value to qualitative research methods (e.g., in-depth case studies) studying teams in new organizational and work settings, high performance contexts or extreme conditions (e.g., Driskell et al., 2018; O'Neill & Salas,

2018; Santistevan & Josserand, 2019). Analogously, action-research studies will promote longitudinal research on teams operating in real work settings, addressing the temporal limitations that research imposes on teams secluded in the lab.

Additionally, our piece suggests the possibility of designing interventions for teams with longer life cycles. These will help us to unravel the potential benefits of different interventions performed over time, enabling a more realistic and rigorous adjustment of the theoretical corpus backing such interventions. Some interventions applied to short-term teams working on short contrived tasks (e.g., interpersonal interventions) do not show positive effects on team performance. However, when the same interventions are applied to long-term teams, they perform better (Bradley et al., 2003). As a whole, team research will benefit from the availability of data reporting the effectiveness of the different interventions detailed here. Particularly, when they are applied to teams in real and complex organizational settings, and such teams are assessed from a temporal and dynamic perspective.

Future research and theory development should focus on the proposal of a classification or taxonomy of real contexts that allows clustering teams in contexts with shared or similar characteristics. This could integrate research results using teams in the wild into broader categories and avoid the dispersion that comes with analyzing teams and specific contexts.

Finally, the range of interventions we propose are rooted in available theoretical models and empirical evidence. This fact may guide the design of interventions and field research seeking a methodological fit between theory (nascent, intermediate, mature) and data (qualitative, quantitative, hybrid) from a contingency approach (Edmonson & McManus, 2007). Only from a solid relationship between theory and practice, and research and application, will we be able to ensure the effectiveness of our interventions on teams performing in real work settings and make the science of teams truly actionable for practitioners.

Implications for practice

A first implication refers the possibility that team interventions will be designed and implemented by the team's embedding organization as a formal intervention (e.g., problem solving). Also, they could be informally designed and implemented as ad-hoc interventions by the team itself departing from the alternatives included in the toolbox. The combination of formal and informal interventions in teams will allow them to determine when and how each kind of intervention will have differential impacts on team performance and outcomes, a very limited knowledge in practice (Okhuysen & Eisenhardt, 2002).

The versatility of the proposal presented herein supports team interventions design that address the needs of teams and the organizations in which they operate. Accordingly, we should be aware that team intervention fiascoes frequently occur when interventions ignore team's performance phases or interventions are designed from team archetypes and outmoded team models (Barner, 2006). As highlighted in the initial part of this piece, in real work settings *teams they are a-changin'* and our empowering or restorative interventions should suit their new characteristics and needs.

Accordingly, our proposal for restorative interventions equip teams with tools that will be handy either when teams are in a transition phase after finishing a performance episode (Marks et al., 2011), or when teams are in the midst of an action phase on a performance episode and need to make a 'pit stop'. The dynamic adjustments needed during team development aim for the detection and early intervention of potential team malfunction, combining reactive and proactive actions. Thus, small on-the-fly adjustments may prevent teams from collapsing. For instance, in action teams involved in intense performance events, in-action team reflexivity processes during such performance event are positively related to team performance, especially in larger teams (Schmutz et al., 2018). Moreover, empowering interventions will enhance informal learning, both at the team and individual levels. In this

regard, extant research has identified several antecedents as conducive to informal learning in teams, such as task analysis and job task variation, role clarification, facilitation of informal communication, or problem solving and innovation (Kukenberger et al., 2015). In turn, improvements in team and individual learning facilitated by empowering interventions can increase team psychological safety.

The proposed toolbox for team intervention ease prioritization decisions about which interventions or new team arrangements (e.g., multi-team systems) are more necessary. Regarding multi-team systems and their increasing prevalence, it is essential to have a wide repertoire of interventions potentially applicable to any team in the system, with special consideration to those crossing boundaries. The different interventions proposed will help multi-team systems to clarify team goals within the system's goal hierarchy, such that effectiveness could be increased across levels (i.e., teams and the system), avoiding potential coordination and motivation losses due to lack of goal alignment (Rico et al., 2017).

Our toolbox is helpful both managers and team leaders in learning new ways to handle team processes (Tannenbaum et al., 2012). The new operating contexts, ongoing technological development, new ways of organizing work, and new kinds of teams that the future of work is bringing require bespoke tools. For example, if we consider 'meta-teams' (i.e., an intermediate team-like structure that allows dynamic teaming to take place within the complex matrices of multinational enterprises –Santistevan & Josserand, 2019) as a new team structure providing a common space of common mindsets and operational practices enabling the movement between local and global possible (Santistevan & Josserand, 2019). Such a new modality of teams, or teaming (Edmonson, 2012), bears little resemblance to the work teams portrayed in the traditional literature (i.e., small size, face-to-face interactions, well-defined bounds). Thus, both meta-team conceptualization and management require new approaches

and tools. Accordingly, our toolbox provides a set of flexible interventions selected according to their contingency to team's needs.

Finally, given that a decontextualized team intervention is unlikely to be successful, our proposal strongly advocates fitting the interventions needed to the characteristics of the embedding environments. In this regard, teams' capacity to cross boundaries and interrelate with the proximal and distal context is one of the most valuable predictors of their effectiveness (Marrone, 2010). Because this capacity depends on teams perceiving their environments as a source of opportunities rather than a pond of threats (Kouchaki et al., 2012), designing interventions to enhance this capacity could multiply team effectiveness.

Limitations

Although our analysis and intervention proposals are based on the current five main challenges for teams in the wild, it is clear that additional factors, processes and emergent states may create further challenges. In this sense, our proposal does not exhaustively cover the myriad elements implied in team functioning, or the range of challenges faced by teams when pursuing and maintaining high performance (O'Neill & Salas, 2018). Furthermore, our proposal has a general and contingent character making easy the assessment of each intervention pertinence as a function of the team characteristics, its tasks, goals and embedding context. Forthcoming analyses should specify the kind of interventions that will be found most adequate and most effective in each specific context.

There is not enough space in a single manuscript to assess the effectiveness of each proposed intervention and to value its potential suitability in different contexts. Thus, subsequent systematic reviews and meta-analysis shall develop a wider body of applied knowledge which will be of paramount assistance to practitioners and field researchers.

Finally, our proposal does not exhaust all potential empowering and restorative team interventions; crafting a comprehensive intervention catalogue was beyond our scope. Thus,

the toolbox presented here has a heuristic value for scholars and practitioners, setting a stage to be expanded as new types of teams, tasks and organizational contexts generate new intervention needs. In short, we offer an open toolbox to be improved with the feedback and cross-fertilization of practice and research.

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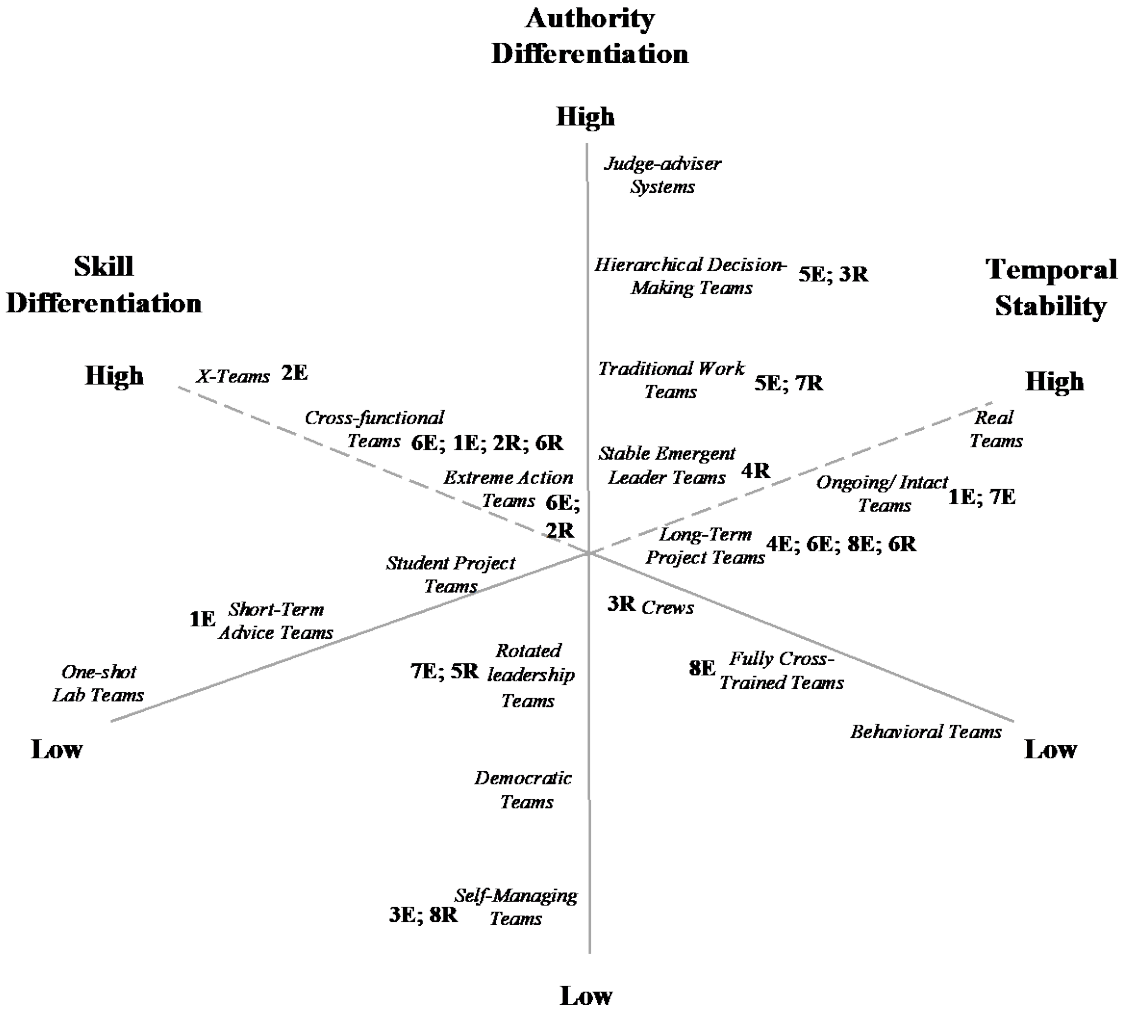
Table 1. Team Challenges in real work settings overview

Team Challenges in Real Work Settings				
First challenge: purposeful team staffing	***Second challenge: proper task design and team allocation***	***Third challenge: task and interaction process functionality***	***Fourth challenge: appropriate team affective tone***	***Fifth challenge: suitable team evaluation***
• Oversimplifying team staffing and its differences with individual selection processes • Deciding the kind of individual characteristics to be considered when assessing team members • Ignoring time effects and team development issues • Overlooking the kind of organizational structure accommodating teams • Neglecting the way team composition will impact team diversity	• Considering both team and individual task autonomy in conjunction with team task interdependence • Overlooking the importance of intra-team coordination and task meaningfulness • Creating a "team-in-name-only", without altering the nature of the individual work • Creating hybrid tasks that require individual work and occasionally teamwork • Designing team tasks to maximize the connection between task and teamwork activities • Enabling the team to minimize errors or to detect them early	• Overseeing the advantages of reactive planning and the moderating variables enhancing overall planning benefits • The creation of dysfunctional processes in teams, caused by affective, behavioral and cognitive states ○ Counterproductive work group behaviors ○ Social loafing risks ○ Groupthink and teamthink risks ○ Intra-team conflict	• Leveraging team members' positive and negative affectivity to enhance team's affective tone • The leader's mood influence in team's affective tone • The difficulty to identify when group affective emergent states taint team processes, which will then become crystallized	• The extent to which teams engage in evaluation activities • Ensuring accuracy, so team evaluation must match team outcomes with the correct measurement methods • Establishing whether the performance appraisal target involves team members and/or the whole team • Establishing clear team effectiveness criteria • Avoiding risks of performance assessment threats in teams (because low levels of team reflexivity or poor psychological safety climate)

Table 2. "Empowering" and "restorative" interventions overview.

		Team Challenges in real work settings				
		Team staffing	***Task design and team allocation***	***Task Processes***	***Affective Team Processes***	***Team Evaluation***
Interventions	***Empowering***	• Team Member Changes (permanent/temporarily) • *X-teams*	• Autonomy Increase • Ongoing Feedback • Goal Setting	• Role Clarification • Problem Solving • Improving Team Adaptive Capacity • Shared and Accepted Clear Goals	• Dual Tuning Affect • Optimal Trust	• Team Viability Assessment • Nonobtrusive Assessment Tools
	Restorative	• Team Membership Intervention • Intrateam Composition Analysis	• Team Interdependencies Assessment • Analysis of Peers' Justice Perception in Teams	• Power Clarification • Collective Leadership / Multi-leader Team	• Perspective Taking • Team Members Emotional Regulation Reflection • Regulation of Emotional Expression •	• After-Action Review • Cross Feedback

Figure 1. Empowering (E) and Restorative (R) Interventions examples located in the Dimensional Scaling Framework for Describing Teams (Hollenbeck et al., 2012).



Interventions

Empowering

1E *Team Staffing*

2E *X-Teams*

3E *Autonomy Increase*

4E *Goal Setting*

5E *Role Clarification*

6E *Team Adaptive Capacity*

7E *Dual Tuning Affect*

8E *Team Viability Assessment*

Restorative

1R *Membership Assessment*

2R *Intrateam Composition Analysis*

3R *Analysis of Peers' Justice Perception*

4R *Intrateam Power Sensitivity*

5R *Collective Leadership*

6R *Perspective Taking*

7R *After-Action Review*

8R *Cross Feedback*