Shared temporal cognitions as substitute for temporal leadership: An analysis of their effects on temporal conflict and team performance

Catarina Marques Santos [a,*], Ana Margarida Passos [a], Sjir Uitdewilligen [b], Annika Nübold [b]

[a] Instituto Universitário de Lisboa — ISCTE-IUL, Business Research Unit — BRU-IUL, Avenida das Forças Armadas, Edifício ISCTE, BRU-IUL, 1649-026 Lisboa, Portugal
[b] Maastricht University, Department of Work and Social Psychology, Faculty of Psychology and Neuroscience, Universiteitssingel 5, Maastricht 6229, ES, The Netherlands

A R T I C L E   I N F O

Due to changing organizational demands, team leaders increasingly need to engage in temporal leadership behaviors in order to coordinate team members' efforts, avoid time related conflicts and ensure that teams perform well. Simultaneously, temporal conflicts and team performance are impacted by team members' shared temporal cognitions. In this study, we investigate the effect of temporal leadership and shared temporal cognitions on team performance via temporal conflict and test whether the impact of temporal leadership on temporal conflict may be substituted by shared temporal cognitions. Our study was conducted in a management simulation involving 142 teams working on a task over 5 weeks. Results suggest that temporal conflict mediates the relationship between temporal leadership and team performance as well as between shared temporal cognitions and team performance. Further, we found support for the idea that shared temporal cognitions function as a substitute of temporal leadership for reducing temporal conflict in teams.

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Over the last decades, organizations have faced a number of changes that pose novel challenges for teams in temporally integrating and coordinating their work processes. As the organizational contexts in which teams operate have become increasingly competitive, teams often have to work under tight deadlines while managing multiple projects at the same time (Gevers, Rutte, & van Eerde, 2006; Waller, Conte, Gibson, & Carpenter, 2001). As a result of these challenges, disagreement among team members on temporal issues or ambiguity over the temporal coordination of actions may arise and create tension and dissatisfaction among members, accumulating in temporal conflict (Jansen & Kristof-Brown, 2005; Mohammed & Nadkarni, 2011; Standifer et al., 2015). Temporal conflict refers to intragroup disputes about time, the duration of a task, and the length of time the team should spend on a specific task or goal (Gevers & Petters, 2009; Mohammed & Nadkarni, 2011). Previous research has demonstrated that temporal conflict is detrimental to a team's ability to attain high quality outputs in time (Mohammed & Nadkarni, 2011; Standifer et al., 2015). Thus, in order to ensure that teams perform well, temporal conflict in teams needs to be minimized (Cataldo & Herbsleb, 2013; Schmidt, Bienvenu, Fitzpatrick, & Amazeen, 1998; Standifer et al., 2015).

In order to avoid conflict over temporal issues in teams, such as meeting times and deadlines, it has become increasingly important to manage the time available to the team and its members. In the present study we propose two different solutions for avoiding or minimizing temporal conflict in teams, namely, temporal leadership and teams' shared temporal cognitions. Importantly, those two concepts represent different coordination mechanisms, an explicit one (temporal leadership) and an implicit

one (shared temporal cognitions), both allowing team members to manage their interdependencies, avoiding conflict, and increasing performance (Rico, Sánchez-Manzanares, Gil, & Gibson, 2008).

Temporal leadership refers to "leader behaviors that aid in structuring, coordinating, and managing the pacing of task accomplishment in a team" (Mohammed & Nadkarni, 2011, p. 492). Temporal leadership is related to the functional leadership approach that postulates that leadership should aim to fulfill the team's needs in order to promote team effectiveness (Zaccaro, Rittman, & Marks, 2001). Mohammed and Nadkarni (2011) operationalized the concept of temporal leadership showing that when team leaders employ strong temporal leadership behaviors they are able to reduce the problems and/or enlarge the benefits of diversity in time urgency (feeling chronically hurried and worried about the passage of time) and pacing style (people's preference for the allocation of time to accomplish tasks under deadlines). When team leaders employ strong temporal behaviors, such as allocation of temporal resources, definition of clear schedules and deadlines, and synchronization of activities, they create temporal synergies and reduce the problems related to time urgency diversity. In addition, strong temporal leadership behaviors convert pacing style diversity into a constructive team experience, avoiding team performance breakdowns (Mohammed & Nadkarni, 2011). In sum, strong temporal leadership "dynamically adjusts individual work cycles and coordinates a team so that work is finished on time" (Mohammed & Nadkarni, 2011, p. 494).

An alternative, but implicit solution for constraining temporal conflict and ensuring high team performance, is the development of shared temporal cognitions (Gevers et al., 2006; Mohammed & Nadkarni, 2014; Standifer et al., 2015). Shared temporal cognitions represent a team's shared ideas with regard to "the temporal aspects of a specific group task, such as the importance of meeting the deadline, (sub)task completion times, and the appropriate timing and pacing of task activities" (Gevers et al., 2006, p. 54). When team members have similar perspectives about deadlines and there is little ambiguity about the timing of actions, this is likely to result in high temporal synchronization and low levels of temporal conflict among members. A number of studies have shown the importance of shared cognitions for facilitating the coordination of actions among team members and team performance (e.g. DeChurch & Mesmer-Magnus, 2010, Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000, Santos & Passos, 2013, Uitdewilligen, Waller, & Pitariu, 2013).

Recently, team researchers have called for studies that consider the interplay between implicit and explicit coordination mechanisms in order to reveal potential interaction effects (like substitution and complementation) on team performance (Espinosa, Lerch, & Kraut, 2004; Rico et al., 2008). Specifically, it has been suggested that implicit coordination mechanisms (like teams' shared cognitions) may substitute explicit mechanisms during team interaction (like temporal leadership), particularly when teams are under time pressure (Espinosa et al., 2004). This idea is also in line with substitutes for leadership theory, suggesting that followers' knowledge and understanding may make leadership redundant (Dionne, Yammarino, Howell, & Villa, 2005; Kerr & Jermier, 1978). When team members have strong shared temporal cognitions as an internal resource, they do not need their leader to employ strong temporal leadership as they already have strong shared ideas for pacing, deadlines, and the alignment of task activities, and decreased temporal ambiguity. This renders the need for an external source of structuring temporal aspects (i.e., temporal leadership behaviors) less important for the team members.

In the present study we examine the mediating mechanism of temporal conflict in the relationship of temporal leadership (Hypothesis 1) and shared temporal cognitions (Hypothesis 2) on team performance. Further, as past research suggests (Nübold, Muck, & Maier, 2013; Podsakoff, MacKenzie, & Bommer, 1996), a substitution effect is best tested when researchers "examine whether the substitutes variables moderate relationships between leader behavior and subordinate criterion variables" (Podsakoff et al., 1996, p. 380). Therefore, we analyze the moderating influence of shared temporal cognitions on the relationship between temporal leadership and team performance (Hypothesis 3). Thus, we analyze whether shared temporal cognitions may function as a substitute for temporal leadership in avoiding temporal conflict. Finally, we analyze the interaction effect of temporal leadership and shared temporal cognitions on performance via temporal conflict with a mediated moderation model (Hypothesis 4).

The contributions of this paper are twofold. First, our study contributes to leadership theory in two ways: By focusing on the temporal aspects of leader behavior and incorporating temporality into a leadership construct (Mohammed & Alipour, 2014), we account for the changing organizational demands and the increasing need to further understand how temporal aspects impact organizational functioning. This may prove especially important as leadership research has largely failed to integrate time (in terms of content) in conceptualizations of leadership (e.g., Van der Erve, 2004), although leaders play a key role in helping the team to be temporally coordinated and achieve high levels of performance. In addition, by investigating shared temporal cognitions as a boundary condition of leadership behavior, we aim to identify a new substitute for leadership in minimizing temporal conflict in the specific context of team cognition and team functioning.

Second, our study contributes to team research in two ways: By investigating the joint effect of teams' external resources – temporal leadership – and teams' internal resources – shared temporal cognitions – we show how an implicit coordination mechanism may substitute an explicit coordination mechanism when reducing temporal conflict in teams and improving team performance. To date, no study has investigated the interplay of explicit and implicit coordination mechanisms and their joint effect on temporal conflict and team performance. Importantly, the power of shared temporal cognitions to substitute for temporal leadership also implies that both resources may compensate for the lack of the other, offering valuable implications for management and team practice. In addition, and similar to the incorporation of temporality in leadership conceptualizations, by focusing on the temporal aspects of team functioning (shared temporal cognition and temporal conflict), we advance scholarly understanding of temporal resources and challenges for teams and follow the call for more research on a highly neglected issue in team research (Halbesleben, Novicevic, Harvey, & Buckley, 2003; Kozlowski & Bell, 2003).

In sum, as effective time management is one of the most challenging aspects in today's business world (e.g., Clemens & Dalrymple, 2005), our aim to focus on time related aspects in the interplay of leadership behavior and team cognition provides