Journal of Business Research 84 (2018) 59–71

Contents lists available at ScienceDirect

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres

Bringing team improvisation to team adaptation: The combined role of shared temporal cognitions and team learning behaviors fostering team performance☆,☆☆

António Cunha Meneses Abrantes[a,*], Ana Margarida Passos[a], Miguel Pina e Cunha[b], Catarina Marques Santos[a]

[a] ISCTE, Instituto Universitário de Lisboa, Av. das Forças Armadas, 1649-026 Lisbon, Portugal
[b] Nova School of Business and Economics, Universidade Nova de Lisboa, Campus de Campolide, 1099-032 Lisbon, Portugal

ARTICLE INFO

Keywords:
Shared temporal cognition
Team improvised adaptation
Team preemptive adaptation
Team learning behaviors
Team performance

ABSTRACT

Change and unpredictability characterize today's business environment. Organizational teams must effectively cope with this reality and ensure that high levels of performance are not compromised. By refining team adaptation with the integration of team improvisation, this study tests a team adaptation temporal framework comprising two processes - team improvised adaptation and team preemptive adaptation. We also investigate the relationships between these constructs and shared temporal cognitions, team learning behaviors, and team performance. We conducted four studies with three different samples, and the results suggest that the two framework constructs are distinct. The results also indicate that team improvised adaptation behaviors mediate the relationship between shared temporal cognitions and team performance, and that team learning behaviors moderate this mediation.

> "Adaptation lies at the heart of team effectiveness".
> (Burke, Stagl, Salas, Pierce, & Kendall, 2006, p. 1189).

1. Introduction

For the last two decades, a growing number of researchers have been focusing on the relevance of adjustments to team processes for team effectiveness, and specifically for team performance. In particular, the team adaptation literature has sought to understand and describe the phenomenon. Team adaptation consists of adjustments to relevant team processes as a response to a disruption (Maynard, Kennedy, & Sommer, 2015). Several researchers have revealed the positive effect of team adaptation on team performance (e.g., Burke et al., 2006; DeChurch & Haas, 2008; Randall, Resick, & DeChurch, 2011; Santos, Passos, & Uitdewilligen, 2016; Woolley, 2009); however, one particular aspect of the temporal dimension of team adaptation has been overlooked – the timing of the trigger or disruption giving rise to the adaptation process, regarding the start of the action phase (Marks, Mathieu, & Zaccaro, 2001). Considering this temporal aspect, some important questions remain unanswered.

Depending on the timing of the trigger, does the team adaptation process change? If so, do these different processes have the same impact on team performance? Under what conditions do they have different impacts? In this article we investigate whether there are different types of team adaptation within its temporal stream, as a function of the timing of the trigger. By integrating the concept of team improvisation, as a collective, deliberate, and simultaneous planning and execution of a novel production (Miner, Bassoff, & Moorman, 2001), we propose a temporal framework that increases the granularity of team adaptation, by developing two different constructs – *team improvised adaptation* and *team preemptive adaptation*. We also examine the impact of the two constructs on team performance, and whether shared temporal cognitions (i.e., "congruent mental representations of 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, Rutte, & van Eerde, 2006, p. 54) and team learning behaviors (i.e., behaviors that enable teams to acquire, share, and combine knowledge; Edmondson, 1999) also influence these relationships.

The temporal framework of team adaptation has time as an

☆ This work was funded by Fundação para a Ciência e Tecnologia (Grant UID/GES/00315/2013). Miguel Pina e Cunha was funded by National Funds through FCT – Fundação para a Ciência e Tecnologia under the project Ref. UID/ECO/00124/2013 and by POR Lisboa under the project LISBOA-01-0145-FEDER-007722.
☆☆ We are grateful for the insights and constructive comments of Joana Story and Richard Fleming.
* Corresponding author.
E-mail addresses: antonio_abrantes@iscte.pt (A.C.M. Abrantes), ana.passos@iscte.pt (A.M. Passos), mpc@fe.unl.pt (M.P.e. Cunha), catarina_marques_santos@iscte.pt (C.M. Santos).

https://doi.org/10.1016/j.jbusres.2017.11.005
Received 3 January 2017; Received in revised form 1 November 2017; Accepted 3 November 2017

ontological characteristic. The Western world represents time, essentially, through a linear perspective in which it is composed of measurable, regular, and deterministic parts, the clock-time notion (Ancona, Okhuysen, & Perlow, 2001). Nonetheless, George and Jones (2000) argue that some occurrences change through time in a spiral trajectory, altering the nature of the occurrence. For adaptation to occur, the temporal dimension between design and execution is irrelevant. Team adaptation can have the design and the execution of the new plan converging in time, or the design can be prior to the implementation. However, when design and execution converge, the scarcity of time might trigger a rise in the intensity of the adaptation process, changing its nature, as suggested by George and Jones (2000). By considering the merger between design and execution within an adaptation process, the team improvisation concept becomes critical since its essence resides in this blend. Based on these assertions, we propose that *team improvised adaptation* is team adaptation when design and execution merge in time, but it can also be seen as team improvisation driven by a disruption. This concept simultaneously configures team adaptation and team improvisation. *Team preemptive adaptation* is team adaptation when design precedes execution.

The distinction between team improvised adaptation and team preemptive adaptation is based on the temporal dimension between design and execution. Therefore, temporal elements of the individuals and the teams become relevant, not only to predict the adoption of either of the two framework processes, but also to predict their impacts on team performance. Shared temporal cognitions are emergent states (Mohammed & Nadkarni, 2014), which are "constructs that characterize properties of the team that are typically dynamic in nature and vary as a function of team context, inputs, processes, and outcomes" (Marks et al., 2001, p. 357). It is known that shared temporal cognitions are positively related to team adaptation (Santos, Passos, & Uitdewilligen, 2016), and to team performance (Gevers et al., 2006; Mohammed & Nadkarni, 2014). Because temporal aspects are relevant for the framework, it is expected that shared temporal cognitions will affect the two constructs. It is also expected that since both team adaptation and team improvisation are positively related to team performance, both framework processes mediate the relationship between shared temporal cognitions and team performance. Moreover, because the temporal characteristics of the two constructs are different, their mediating role between shared temporal cognitions and team performance might also be different.

Team learning behaviors are a fundamental aspect of team adaptation (e.g., Burke et al., 2006), and are positively related to team performance (e.g., Edmondson, 1999; Santos, Uitdewilligen, & Passos, 2015; Schippers, Homan, & van Knippenberg, 2013). If teams adopt learning behaviors, they increase their likelihood of successfully adapting. Therefore, we expect the relationships between shared temporal cognitions and the two processes of the team adaptation temporal framework to be moderated by team learning behaviors. Moreover, we predict that the adoption of team learning behaviors will moderate the mediation of team adaptation processes between shared temporal cognitions and team performance. Because the time scarcity that characterizes team improvised adaptation processes creates a hurdle for teams to efficiently share and combine knowledge, the adoption of team learning behaviors becomes even more important. Therefore, our main prediction is that the moderation effect is most important when teams adopt improvised adaptation processes.

This study contributes to team literature, and in particular to team adaptation and team improvisation literatures, in two important ways. To date, team adaptation researchers have neglected the temporal dimension of the adaptation process regarding design and execution. Failure to consider the temporal dimension within the team adaptation process inhibits researchers from refining their findings based on processes that are different, have different antecedents, and different outcomes. By integrating time into our framework, our research contributes to team adaptation and team improvisation literatures, through examining the validity of the team adaptation temporal framework, and developing measurement instruments for the two constructs – team improvised adaptation and team preemptive adaptation. By predicting that the two constructs, while related, are conceptually distinct, and represent different facets of team adaptation, we augment the granularity of the field. Our research also contributes to team research by analyzing shared temporal cognitions as antecedents of the two constructs, and by analyzing the moderating role of team learning behaviors in the mediation of the two processes between shared temporal cognitions and team performance. Moreover, we examine in detail whether these relationships are different along the different facets of the team adaptation temporal framework.

We conducted four separate studies. In the first we developed a questionnaire and performed an exploratory factor analysis to test the quality of the items. In the second we used the questionnaire improved in study one and performed a second exploratory factor analysis to examine whether the items would indeed fit within two separate constructs. In the third we conducted a confirmatory factor analysis, testing the factorial structure at both the individual and team levels, and tested for convergent, discriminant, and predictive validity. Finally, in the fourth study, we used structural equation modeling and ordinary least square regressions to explore the mediating role of the two processes between shared temporal cognitions and team performance, and the moderating role of team learning behaviors between the framework processes and team performance.

2. Theory and hypotheses

2.1. Team adaptation temporal framework

The line of research followed by the team adaptation literature has had an input-process-output approach (e.g., Burke et al., 2006; Maynard et al., 2015), focusing on team adaptability (i.e., the capacity of a team to adapt), on the adaptation process itself, and on the adaptive outcomes. Another relevant aspect within the team adaptation literature relates to the way teams adapt. Some authors suggest that teams adapt by implementing structural changes in response to environmental shifts (e.g., Gorman, Cooke, & Amazeen, 2010), while others propose adaptation through alterations in the strategy for action (e.g., Marks, Zaccaro, & Mathieu, 2000; Randall et al., 2011). Maynard et al. (2015) synthetized the different approaches to the way teams adapt by introducing adaptation content areas. They used Marks et al.' (2001) taxonomy, stating that teams, when facing a disruption, can make changes in action processes, interpersonal processes, or transition processes. Whatever the approach to the way teams adapt, the temporal dimension along the design and execution of an adaptation process has never been considered as relevant.

Team adaptation and team improvisation are close concepts, to the point that some authors consider that sometimes teams have to improvise in order to adapt (e.g., Crossan, Lane, White, & Klus, 1996). In fact, Cunha, Clegg, Rego, and Neves' (2014) classification of ad-hoc improvisation as a spontaneous reaction to unexpected events, and *managed* improvisation as a skilled, trained, and managed response in real time, are also adaptation processes as they are a reaction to a disruption. However, improvisation does not always imply adaptation: it can be deployed either in response to a disruption, or simply by the teams' own will to change, or even as a form of resistance. For example, *covert* improvisation represents an informal reaction to the status quo, and *provocative* improvisation is an attempt to challenge organizational practices (Cunha et al., 2014). These two types of improvisation are not a response to unexpected events and do not necessarily represent adaptation processes. When machine repair technicians decided not to adopt the official recommendations of the company, and explored new improvised ways to conduct their jobs (Orr, 1996), they were improvising but were not adapting. In this sense, team improvised adaptation is a particular form of team improvisation. It is not solely the