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The clocks that time us are not the same: A theory of temporal diversity, task characteristics, and performance in teams ☆

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ABSTRACT

Temporal individual differences are an under-explored, but research-worthy form of diversity in teams. Although persistent differences in how members think about and value time can profoundly influence team performance, the compositional impact of time-based individual differences is regularly overlooked. Optimal or suboptimal team performance can result because the composition of time-based individual differences is matched or unmatched (respectively) to task demands. Therefore, we offer a detailed presentation of how the configuration of four time-based individual differences (time urgency, time perspective, polychronicity, and pacing style) interact with two task typologies (task type and task complexity) to specify when elevation (mean) and diversity (dispersion) of temporal differences is helpful or harmful to team performance.

Introduction

Differences in the composition of individual characteristics are a large part of what makes teams unique, giving rise to complex patterns of dispersion that are quintessentially team-level. Given this presumption, what individual differences should be considered in forming maximally effective teams? In answering this question, researchers have investigated various categories of attributes, including cognitive factors (e.g., education, functional knowledge), social category differences (e.g., gender, ethnicity), personality traits (e.g., conscientiousness, extraversion), and status differences (e.g., organizational tenure, title) (Mannix & Neale, 2005; Moreland & Levine, 1992). Based on these categories of individual differences, however, "so far, extensive efforts to link diversity with team performance have thus been relatively futile" (Stewart, 2010, p. 802). Indeed, many quantitative (e.g., Bell, 2007; Bell, Villado, Lukasik, Belau, & Briggs, 2011; Bowers, Pharmer, & Salas, 2000; Horowitz and Horowitz, 2007; Stewart, 2006; Webber & Donahue, 2001) and qualitative (e.g., Jackson, Joshi, & Erhardt, 2003; Mannix & Neale, 2005; Milliken & Martins, 1996; Moreland, 2012; van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998) reviews of team diversity have reprised this conclusion, consistently referring to the lack of discernible or mixed effects on team performance, especially for demographic and broad personality variables.

There is one category of individual differences important to team success, however, that is commonly excluded from lists generated by researchers and practitioners alike: time-based characteristics, including time urgency (feeling chronically hurried), time perspective (cognitive bias toward being past, present, or future oriented), polychronicity (preference to engage in more than one task concurrently), and pacing style (pattern of effort distribution over time in working toward deadlines). Diversity scholars have urged that future research focus on categories that are not only task-based, but relevant and critical to the self identities of group members (e.g., Mannix & Neale, 2005; Van Knippenberg, De Dreu, & Homan, 2004). Temporal individual differences meet both of these criteria. All teams have some sort of implicit or explicit time constraints, and the ticking clock has practically become an obsession in modern organizations, with an unrelenting struggle to shorten wait times, speed up the delivery of services and products, and gain a temporal advantage over the competition (e.g., Pearce, 2011). In addition, because they are so deeply ingrained, temporal constructs have been recognized as one of the fundamental parameters of individual differences (Bluedorn & Denhardt, 1998).

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Despite their potential importance, however, temporal characteristics seldom make the research list of what is considered important for team performance. In practice, temporal individual differences likely operate "beneath" awareness, and are not often part of the initial conversation or everyday language of getting work done in teams (e.g., Waller, Conte, Gibson, & Carpenter, 2001). Nevertheless, persistent differences in how members think about and value time can profoundly influence team performance, either positively or negatively. Failure to identify the underlying temporal source of team difficulties or successes can cause a team to "spin its wheels" on various interventions and training programs that never directly address how the asynchrony of member beats could be at the heart of many team performance issues.

In addition to the question of *what* individual differences should be considered in forming maximally effective teams, the question of *how* individual differences should be configured must also be addressed (e.g., Moreland, Levine, & Wingert, 1996). Should teams be staffed with individuals of differing characteristics or should variability be minimized? Would a leader, for example, benefit from deliberately including members who have different temporal orientations in the same team (e.g., time-urgent and time-patient individuals; present and future time perspective individuals)?

Clearly, the received wisdom throughout the decades leans heavily in the direction of synchrony, coordination, harmony, and collective flow. Indeed, the machine metaphor that underlies the way that we think about action teams underscores the necessity of group members being synched up in a system where all of the gears and interchangeable parts are carefully coordinated. In contrast, poor performance in sports teams is commonly attributed to the inability to find a rhythm and team members being "out of sync" (e.g., Jackson, 2011; Rogers, 2009; Sando, 2008). Similar assumptions abound in the team literature, where synchronization with others is thought to foster smooth team and organizational functioning through increased coordination and control (Puffer, 1989), and temporal misfit facilitates inefficiencies and poor performance (Perez-Nordtvedt, Payne, Short, & Kedia, 2008). This notion is also embodied in the empirically supported "in-sync preference" that results in a bias toward temporal alignment when interacting with others and negative psychological consequences when people are out of tempo with one another (Blount & Janicik, 2002).

Given that practitioners and researchers generally endorse greater synchrony and harmony as the model for effective teams, the implicit theory underlying temporal individual differences is that they should be minimized. However, we challenge this notion, arguing that there are situations in which it is optimal to increase the variability of time-based characteristics. Ultimately, whether diversity of temporal individual differences should be maximized or minimized will depend on relevant aspects of the task environment. Therefore, it seems to us that intra-team temporal diversity should be matched to the nature of task demands and task complexity.

The purpose of our paper is twofold. First, we draw attention to time-based characteristics as an under-explored, but research-worthy form of individual differences operating in a team. We expand beyond commonly studied categories of diversity (e.g., demographics, functional background, Big Five personality traits) to propose that the varying perspectives that team members hold relative to time exert potentially powerful effects on team performance, given the need to carefully manage temporal resources in today's business world. Yet, because temporal features are not highly visible or commonly considered, their compositional impact on team functioning is regularly overlooked. The potential combination of "hidden" but "potent" temporal differences is particularly problematic because it is likely that temporal differences will be misattributed to more explicitly addressed background features, personality traits, stereotypes, and attitudes.

A second purpose of our research is to present a theory that matches a team's composition of time-based individual differences with task types. Because it can be advantageous or disadvantageous for members to differ on temporal characteristics, the specific nature of effects on team performance will depend on the team's task and the specific attribute under discussion. Optimal or suboptimal team performance can result because the composition of time-based individual differences is (respectively) matched or unmatched to task demands.

Temporal individual differences

Time urgency

Time-urgent individuals subscribe to the belief that temporal resources are scarce and must be conserved, resulting in a preoccupation with the passage of time, deadlines, and the rate that tasks must be performed (e.g. Landy, Rastegary, Thayer, & Colvin, 1991). Whereas time pressure reflects externally imposed constraints, time urgency reflects constraints that are internally imposed (Rastegary & Landy, 1993). Individuals high on time urgency attend to deadlines rigorously and are chronically hurried, which involves eating fast, talking fast, finishing others' sentences, and hating to wait (Conte, Mathieu, & Landy, 1998; Menon, Narayanan, & Spector, 1996). Time urgency is regarded as a stable individual difference, as indicated by the high test–retest reliability of existing measures (Conte, Landy, & Mathieu, 1995; Landy et al., 1991).

Time perspective

Time perspective (also labeled temporal focus) refers to the relative importance of past, present, and future time frames. Individuals with a present-time perspective focus on immediate pleasure, take more risks, and make plans with shorter time frames, whereas individuals with a future-time perspective are highly goal-oriented, make longer-term plans, and are more likely to consider future consequences (Ashkanasy, Gupta, Mayfield, & Trevor-Roberts, 2004). Past orientation reflects either a pessimistic and aversive or a nostalgic and sentimental view of the past (Thoms, 2004). According to Zimbardo and Boyd (1999), a habitual over- or under-emphasis on the past, present, or future serves as a fairly stable, cognitive temporal bias, with high test–retest reliabilities in relevant measures (Keough, Zimbardo, & Boyd, 1999; Strathman, Gleicher, Boninger, & Edwards, 1994). This bias has been shown to predict how individuals will respond across various choices with task implications, including information processing, planning, and decision making (e.g., Das, 1987; Kivetz & Tyler, 2007; Simons, Vansteenkiste, Lens, & Lacante, 2004).

Polychronicity

Conceptually distinct from time urgency and time perspective, polychronicity describes a proclivity towards particular patterns of simultaneity in how work is done (Conte, Rizzuto, & Steiner, 1999; Slocombe & Bluedorn, 1999). Specifically, the construct is defined as the extent to which individuals prefer to be engaged in more than one task concurrently (Bluedorn, Kalliath, Strube, & Martin, 1999; Konig & Waller, 2010). Based on high test–retest reliability coefficients for relevant measures (e.g., Bluedorn, 2002; Conte & Jacobs, 2003; Conte et al., 1999), polychronicity is considered to be more of a trait than a state.

Highly monochronic individuals focus on one task at a time (A is started and finished before B is begun), perceive events other than a focus on A as interruptions (e.g., a phone call about B while doing A), and attempt to shield themselves from distractions that keep A