A R T I C L E S

IT'S ABOUT TIME: NEW PERSPECTIVES AND INSIGHTS ON TIME MANAGEMENT

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Time management has helped people organize their professional lives for centuries. The existing literature, however, reveals mixed findings and lack of clarity as to whether, when, how, and why time management leads to critical outcomes such as well-being and job performance. Furthermore, insights relevant to time management are scattered across various disciplines, including sociology, psychology, and behavioral economics. We address both issues by synthesizing and integrating insightful elements from various fields and domains into three novel perspectives on time management. First, we draw on the sociology of time to describe two key concepts: time structures and time norms. We illustrate how time structures and time norms operate at the team, organizational, and national levels of analysis in influencing time management outcomes. Second, we draw on the psychology of time to show how individual differences including time-related beliefs, attitudes, and preferences affect the way people manage time and, consequently, time management outcomes. Third, we rely on the behavioral economics literature to describe how cognitive biases influence individual time management decisions. Integrating insights from a diverse set of fields results in a better understanding of past research and allows us to reinterpret conflicting results prevalent in the time management literature. Finally, we offer directions for future research and discuss implications for how organizations and individuals can implement interventions resulting in a stronger and positive relationship between time management and desirable outcomes.

The Roman philosopher Seneca (50/2014, p. 118) lamented that people trifle with time, because time is "an immaterial thing that doesn't appear to the eyes, and for that reason it's valued very cheaply." Two thousand years later, people still have "neither the necessary economic sophistication nor the perceptual apparatus to account for time in the same way as they account for money" (Soman, 2001, p. 171).

Systematically accounting for time, or what is commonly referred to as time management, has been studied by numerous disciplines. For example, in sociology, researchers have examined the effect of managing one's time on social coordination among people (Southerton, 2003). A typical approach

adopted by sociologists is Giddens's (1984) structuration theory, which posits that people are simultaneously constrained by but also shape socially constructed schedules (e.g., Flaherty, 2011). In developmental psychology, researchers have looked at how family stability in early childhood later influences adults' time management (Malatras, Israel, Sokolowski, & Ryan, 2016). Researchers in developmental and other psychology subfields usually study time management through the lens of time-related constructs such as discounted utility (e.g., König & Kleinmann, 2007) and procrastination (e.g., Ariely & Wertenbroch, 2002; Van Eerde, 2015). In history, some have argued that the industrial age came about not because of the steam engine, but because of our increasing willingness to abide by our own schedules (Mumford, 2010; Thompson, 1967). Historians often use a power perspective to frame

time systems (e.g., calendars, work hours) as a locus of struggle and negotiation between opposing groups (e.g., Martineau, 2015).

In the particular case of the field of management, Peter Drucker (1967, p. 22) wrote, "Everything requires time. It is the one truly universal condition. All work takes place in time and uses up time." Unsurprisingly, then, time management plays an important role in numerous subdomains such as work–life conflict (Adams & Jex, 1999), job performance (Barling, Cheung, & Kelloway, 1996), cross-cultural management (Nonis, Teng, & Ford, 2005), stress (Häfner, Stock, Pinneker, & Ströhle, 2014), creativity (Zampetakis, Bouranta, & Moustakis, 2010), life satisfaction (Macan, Shahani, Dipboye, & Phillips, 1990), and even unemployment (Wanberg, Griffiths, & Gavin, 1997).

The description above shows that key theoretical and empirical insights that can enhance our understanding of time management are dispersed across many disciplines, including sociology (Flaherty, 2003), psychology (Burt & Kemp, 1994), childhood education (Liu, Rijmen, MacCann, & Roberts, 2009), management (Claessens, Van Eerde, Rutte, & Roe, 2004), and consumer behavior (Feldman & Hornik, 1981), to name a few. The scattered state of the literature hinders progress because insights from some disciplines and domains are seldom taken into account by others. For instance, Britton and Tesser (1991) studied time management from an educational psychology perspective, and according to Web of Science over 91% of this paper's citations were linked to psychology and education outlets; only 2% were made by sociology-focused publications. Likewise, Zerubavel's (1979b) sociology-based paper on time garnered over 61% of its total citations from sociology outlets and a mere 5% from psychology-oriented outlets. Furthermore, as we describe below, the time management literature reveals conflicting findings as to whether time management leads to critical and highly desirable outcomes such as enhanced well-being and improved job performance.

Given these issues, the goal of our article is to synthesize and integrate theoretical and empirical insights relevant to time management from multiple disciplines and domains in a way that is accessible to a nonspecialist audience as well as scholars inside and outside the field of management. This integration of diverse theories and advances based on empirical evidence provides a framework that informs time management in new ways, allowing us to reinterpret and better understand variations and conflicting findings in past studies and also guide future conceptual and empirical research.

Our article is organized as follows. First, we define time management and dispel some common myths. We show that, for instance, contrary to popular belief, time management is no fad from the 1970s; rather, time management has been of interest to philosophers, businesspeople, and politicians for centuries. Second, we review the evidence regarding the relationship between time management and two critical and widely examined outcomes in management and other fields: well-being and performance. Results exhibit much variation, are often contradictory, and reveal a murky literature in need of clarification. Third, we integrate dispersed insights from multiple disciplines to offer three novel perspectives that advance our understanding of time management. In particular, we focus on time structures and norms, two key concepts from the sociology of time that help us understand how environmental factors influence time management. Then we discuss time-related individual differences—key concepts from the psychology of time that heavily influence people's temporal behaviors. We subsequently proceed to examine how temporal decision making, a subfield of behavioral economics that is also informed by psychology and social cognition, sheds light on the underlying dynamics of time management.

Fourth, using our framework based on our integration of insights from these multiple disciplines, we make sense of seemingly conflicting findings. For instance, our perspective on time structures and norms shows how employees who exhibit stellar time management might not necessarily receive excellent performance appraisals in organizations where time norms prioritize long work hours and "face time" rather than actual efficiency. As a result, studies that fail to take into account organizations' time structures and norms produce inconsistent findings on whether time management does, in fact, have a positive effect on job performance. Similarly, our time-related individual differences perspective shows that some people simply are less likely to benefit from time management training than others. Thus, failing to consider individual differences compromises the validity of statements regarding time management training effectiveness and its various outcomes.

What's more, our temporal decision-making perspective shows that some by-products of time management training (e.g., the temporal sunk-cost effect) might actually be detrimental to job performance. In sum, our framework based on diverse disciplines

and management domains, with a multilevel perspective, allows us to gain new perspectives and insights regarding the meaning of time management as well as whether, when, how, and why time management leads to critical outcomes such as well-being and job performance. Finally, we conclude by offering directions for future research on time management as well as practical implications for organizations and individuals.

TIME MANAGEMENT: DEFINITION AND OUTCOMES

Time management predates the modern Gregorian calendar and the mechanical clock. As mentioned above, scholars and laypeople alike have reflected for centuries on how to best use time (e.g., Alberti, 1444/1971; Aurelius, 167/1949; Bennett, 1910; Franklin, 1757/1964; Penn, 1794; Seneca, 50/2014; St. Benedict, 530/1975), a fact that attests to the perennial pervasiveness of time management. There is, however, no widely established definition of time management (Claessens et al., 2007). Some define it as a "combination of time assessment, goal setting, planning, and monitoring activities" (Häfner & Stock, 2010, p. 430) or a "self-controlled attempt to use time in a subjectively efficient way to achieve outcomes" (Koch & Kleinmann, 2002, p. 201), while others do away with the need to define time management altogether (e.g., Barling, Cheung, & Kelloway, 1996; Trueman & Hartley, 1996).

The problem of defining time management is compounded by the fact that different disciplines have slightly different takes on what time management means. In sociology, for instance, the emphasis might be on the structure of personal time, whereas in psychology the emphasis might be on the ability to stick to plans and make accurate estimates of how long a task will take. For this reason, we need a definition that subsumes, integrates, and applies to a wide range of disciplines. We adopt a person-centered perspective in which we conceptualize individuals as proactive and intentional agents (Aguinis & Glavas, in press; Rupp, 2011). In line with this perspective, we contend that individuals make decisions about how they allocate time. Accordingly, we define time management as *a form of decision making used by individuals to structure, protect, and adapt their time to changing conditions.* This definition is consistent with an agentic perspective of time (Granqvist & Gustafsson, 2016).

Indeed, calendars, schedules, holidays, semesters, clock time, and weekends are not "brute physical facts" (Searle, 1995); rather, they are social constructions subject to change and negotiation (Berger & Luckmann, 1966; Zerubavel, 1981). At the individual level of analysis, people are arguably free to organize their time as they see fit (Zerubavel, 1976) by drawing on existing time models (Orlikowski & Yates, 2002) or creating their own unique time structures (Flaherty, 2003; Kreiner, Hollensbe, & Sheep, 2009). In fact, sociological research suggests that even when people complain of having little control over their time, the reality is that they often do, but prefer to absolve themselves of responsibility by denying their ability to manage it (Flaherty, 2011).

We conducted a selective review of the literature by searching for "time management" in EBSCO's Business Source Complete database. We also gathered additional sources by identifying papers that used time management measures (e.g., Britton & Tesser, 1991; Macan et al., 1990) and articles featured in Claessens et al.'s (2007) overview of the literature. Virtually all of the studies focused on two main outcomes of time management: well-being and performance. This emphasis is not surprising because these are key outcomes for individuals and organizations and the focus of most management theories as well as the target of many interventions and practices (Aguinis, Davis, et al., 2016; Grant, Christianson, & Price, 2007; Salas, Kozlowski, & Chen, 2017). We divided the articles we gathered in our search into two groups of 20 empirical articles, one about well-being and the other about job performance (see Tables 1 and 2, below). In the following sections, we assess how time management affects these two outcomes. Our intent is not to cover the full breadth of the literature. Rather, because our paper's goal is to integrate and offer new perspectives and insights, we focus on the core conclusions of the literature.

Time Management and Well-Being

Table 1 includes summaries of studies that examined the relationship between time management and well-being. Well-being is the experience of "pleasant emotions, low levels of negative moods, and high life satisfaction" (Diener, Lucas, & Oishi, 2002, p. 63). Bond and Feather (1988) were among the first to study the impact of time management—using their Time Structure Questionnaire, which measures the degree to which people's time is structured and purposeful—on various facets of well-being. The authors administered the questionnaire to a cohort of psychology students and found time management

TABLE 1
Summary of Selective Research on the Relationship Between Time Management and Well-Being

Authors	Sample	Research design and measures	Conclusions
Adams and Jex (1999)	522 working adults/part-time students	Self-report questionnaire	Time management correlates with health ($r = .39$) and job satisfaction ($r = .27$) indirectly through perceived control of time and a reduction of work–family conflict.
Bond and Feather (1988)	Undergraduate psychology students (sample 1 = 336; sample 2 = 193; sample 3 = 217)	Self-report questionnaire	Time management is positively associated with better health ($r = .27$), a sense of purpose ($r = .65$), and optimism ($r = .31$), and negatively related to depression ($r = -.44$), psychological distress ($r = -.37$), and anxiety ($r = -.56$).
Chang and Nguyen (2011)	111 undergraduate students	Self-report questionnaire	Time management correlates positively with job satisfaction ($r = .31$) and psychological well-being ($r = .31$).
Claessens et al. (2004)	70 R&D engineers	Self-report questionnaire	Time management is associated with job satisfaction ($r = .30$) and work strain through perceived control of time ($r = -.58$).
Häfner and Stock (2010)	71 employees (trading company)	Experiment (time management training)	Time management training is negatively related to stress and increases perceived control of time.
Häfner, Stock, et al. (2014)	177 undergraduate students	Experiment (time management intervention)	Time management training reduces perceived stress (partial $\eta^2 = .03$) and increases perceived control of time (partial $\eta^2 = .03$).
Häfner et al. (2015)	23 undergraduate students	Non-equivalent dependent variable design (time management intervention)	Time management training increases perceived control of time and reduces perceived stress.
Jex and Elacqua (1999)	525 full-time employees/ part-time students	Self-report questionnaire	Time management is negatively associated with strain ($r = -.15$ to $-.42$).
Kelly (2003)	130 undergraduate students	Self-report questionnaire	Time management is negatively related to worry ($r = -0.21$), although an alternative measure of time management showed no significant correlation ($r = .04$).
Lang (1992)	96 full-time and part-time employees (taking evening business classes)	Self-report questionnaire	Time management correlates with less anxiety ($r = -.22$) but not depression and somatic symptoms.
Macan (1994)	Study 1: 353 employees (various organizations); study 2: 341 undergraduate students	Self-report questionnaire	Time management is related to perceived control of time ($r = -.04$ to .43), which in turn relates to increased job satisfaction ($r = .29$) and reduced stress ($r = -.32$).
Macan (1996)	44 employees (social service agency)	Quasi-experimental field study (in-house time management training)	Time management training increases perceived control of time and reduces somatic tensions.
Macan et al. (1990)	165 graduate and undergraduate students	Self-report questionnaire and grade point average	Time management is associated with less role ambiguity ($r = -.47$) and somatic tension ($r = -.26$), and with greater job ($r = .26$) and life satisfaction ($r = .23$).
Misra and McKean (2000)	249 university students	Self-report questionnaire	Time management correlates with less academic stress ($r = .006$ to $-.39$).
Nonis and Sager (2003)	201 sales representatives	Self-report questionnaire	Time management correlates negatively with stress ($r = -.19$ to $-.32$).
Nonis, Teng, and Ford (2005)	205 MBA students (U.S. and Sri Lanka)	Self-report questionnaire	Time management correlates positively with job satisfaction ($r = .18$ to .39).
Peeters and Rutte (2005)	123 elementary teachers	Self-report questionnaire	Time management correlates with emotional exhaustion in people who have low autonomy and high work demands ($r = -.17$).
Van Eerde (2003)	37 trainees	Quasi-experiment	Time management reduces worrying ($\eta^2 = .08$).

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TABLE 1
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Authors	Sample	Research design and measures	Conclusions
Van Hoye and Lootens (2013)	231 unemployed people	Self-report questionnaire	Time structuring correlates with psychological well-being during unemployment ($r = -.12$ to .52).
Wanberg, Griffiths, and Gavin (1997)	243 unemployed and employed individuals	Self-report questionnaire (longitudinal)	Time structuring correlates with better mental health among unemployed people ($r = .19$).

Note: Effect sizes indexed by r^2 (Pearson's correlation squared or coefficient of determination, typically used in nonexperimental research) and η^2 (η-squared, typically used in experimental research) indicate proportion of variance explained. η-squared is the proportion of total variation attributable to the factor, and partial η-squared is the proportion of total variation attributable to the factor partialing out other factors from the total nonerror variation (Pierce, Block, & Aguinis, 2004). To put effect sizes in this table in perspective, Bosco, Aguinis, Singh, Field, and Pierce (2015) reviewed 30 years of articles published in the *Journal of Applied Psychology* and *Personnel Psychology*, and, based on a total of about 150,000 r's, they reported an average $r = .16$ (absolute value), with the 33rd and 67th percentile values of .09 and .26, respectively. However, interpreting the importance of effect sizes requires that they be put in context. Therefore, labels such as "small," "medium," and "large" should not denote importance and should be based on only the size of the correlation. For example, the same effect size of $r = .20$ would be interpreted as being much more important if the dependent variable is heart failure compared to self-reported job dissatisfaction on a 7-point Likert-type scale.

to be associated with a stronger sense of purpose, higher self-esteem, better health, and optimism. They also found that managing time was associated with lower levels of depression, psychological distress, anxiety, and hopelessness, with effect sizes ranging from $r = -.13$ for anxiety to $r = .65$ for sense of purpose in life. Subsequent studies found time management to be associated with greater life satisfaction (Macan et al., 1990) and job satisfaction (Macan, 1994), lower anxiety (Lang, 1992), and lower strain (Jex & Elacqua, 1999).

Many of these early studies used passive observation designs, so conclusions about causality were ambiguous (Aguinis & Vandenberg, 2014). Could it be that there is reverse causality and, actually, that higher levels of well-being lead to improved time management? Macan (1996) was among the pioneers who used experiments to determine whether time management training enhances well-being. She studied workers from a large social service agency who had attended a two-day training session taught by an in-house instructor and compared them with co-workers who had not undergone time management training. The training session included time management techniques such as learning how to handle interruptions (Lakein, 1973). Her quasi-experimental field study revealed that time management training reduced job-related somatic tensions and increased perceived control of time. A subsequent series of experiments by Häfner and colleagues involving German workers and university students showed that time management training reduced perceived stress (Häfner & Stock, 2010; Häfner, Stock, & Oberst, 2015; Häfner, Stock, et al., 2014).

Overall, nonexperimental and experimental findings suggest that time management can improve people's quality of life, lower stress, boost job satisfaction, and enhance other facets of well-being (see Table 1). However, suggestive though they may be, results are far from conclusive, and the existing literature is not sufficiently large to conduct meta-analyses (Aguinis, Pierce, Bosco, Dalton, & Dalton, 2011). For example, if we focus only on studies that link Macan et al.'s (1990) time management measure to job satisfaction, we note quite a few differences in effect sizes. Claessens et al. (2004) reported an effect size of $r = .30$; Macan's (1994) ranged from $r = .10$ (statistically nonsignificant) to $r = .19$ depending on the subscale; and Nonis, Teng, and Ford (2005) failed to find statistically significant effects in their U.S. sample. In other words, while results point to time management being a potential well-being enhancer, results exhibit substantial variability.

In sum, our review suggests that, overall, time management may be useful for well-being enhancement and stress relief. We now turn to the question of whether time management improves performance.

Time Management and Performance

Table 2 includes a summary of studies that have examined the relationship between time management and performance. In their pioneering study, for instance, Hall and Hursch (1982) studied the effects of reading a time management manual on four university faculty and staff members. The manual's aim was to help people spend more time on high-priority tasks and less time on meetings and interruptions. The

TABLE 2
Summary of Selective Research on the Relationship Between Time Management and Performance

Authors	Sample	Research design and measures	Conclusions
Barling et al. (1996)	102 salespeople (car sales)	Self-report questionnaire	Time management alone does not correlate with job performance as measured by objective sales, although time management does interact with achievement striving in predicting sales ($r = .32$).
Britton and Tesser (1991)	90 undergraduate students	Self-report questionnaire (longitudinal)	Time management correlates with academic achievement as measured by GPA ($r = -.10$ to $.39$).
Claessens et al. (2004)	70 R&D engineers (semiconductor industry)	Self-report questionnaire	Time management is associated with self-reported job performance ($r = .33$).
Häfner, Oberst, et al. (2014)	96 undergraduate students	Experiment (time management intervention)	Time management intervention reduces procrastination (partial $\eta^2 = .21$).
Häfner and Stock (2010)	71 employees (trading company)	Experiment (time management training)	Time management training has no impact on performance as assessed by supervisors.
Hall and Hursch (1982)	4 participants (university faculty and staff)	Time management intervention without control group	Time management is associated with an increase in time spent on high-priority tasks and self-rated effectiveness.
Käser et al. (2013)	196 university students	Experiment	Dedicating uninterrupted time to work on some tasks (i.e. quiet time) leads to lower performance.
König, Kleinmann, and Höhmann (2013)	27 managers (financial sector)	Experimental diary study	Dedicating uninterrupted time to work (i.e. quiet time) leads to higher self-reported job performance ($\beta = .83$).
Macan (1994)	Study 1: 353 employees; study 2: 341 undergraduate students	Self-report questionnaire	Time management is not associated with job performance.
Macan (1996)	44 employees (social service agency)	Quasi-experimental field study (time management training)	Time management training does not lead to more time management behaviors and does not increase job performance.
Macan et al. (1990)	165 graduate and undergraduate students	Self-report questionnaire	Time management is associated with higher self-reported performance as measured both by perceptions ($r = .32$) and GPA ($r = .23$).
Nonis, Fenner, and Sager (2011)	201 salespeople (various sectors)	Self-report questionnaire	Time management correlates positively with self-reported job performance ($r = .13$ to $.43$).
Nonis et al. (2005)	205 MBA students (U.S. and Sri Lanka)	Self-report questionnaire	Time management is associated with higher self-reported job performance ($r = .06$ to $.26$).
Orpen (1994)	52 supervisors (manufacturing sector)	Experiment (training program)	Time management training increases job performance as assessed by managers' appraisal of participants' activity diaries.
Rapp et al. (2013)	212 employees and 41 supervisors (hospitality industry)	Self-report questionnaire	Time management correlates with the influence of helping behavior ($r = .16$) on job performance.

TABLE 2
(Continued)

Authors	Sample	Research design and measures	Conclusions
Slaven and Totterdell (1993)	32 employees (various sectors)	Time management intervention (no control group)	Time management training is not associated with motivation, commitment, and time spent on high-priority tasks.
Trueman and Hartley (1996)	293 university students	Self-report questionnaire	Time management is associated with overall academic performance ($r = .21$).
Van Eerde (2003)	37 trainees	Quasi-experiment	Time management reduces procrastination ($\eta^2 = .10$).
Woolfolk and Woolfolk (1986)	81 pre-service teachers (undergraduate seniors)	Experiment (time management training)	Time management training does not increase performance ratings as assessed by cooperating teachers and supervisors.
Zampetakis et al. (2010)	186 undergraduate students	Self-report questionnaire	Time management is positively associated with creativity ($r = .48$).

Note: GPA = grade point average. Effect sizes indexed by r^2 (Pearson's correlation squared or coefficient of determination, typically used in nonexperimental research) and η^2 (η-squared, typically used in experimental research) indicate proportion of variance explained. η-squared is the proportion of total variation attributable to the factor, and partial η-squared is the proportion of total variation attributable to the factor partialing out other factors from the total nonerror variation (Pierce, Block, & Aguinis, 2004). To put effect sizes in this table in perspective, Bosco, Aguinis, Singh, Field, and Pierce (2015) reviewed 30 years of articles published in the *Journal of Applied Psychology* and *Personnel Psychology*, and, based on a total of about 150,000 r's, they reported an average $r = .16$ (absolute value), with the 33rd and 67th percentile values of .09 and .26, respectively. However, interpreting the importance of effect sizes requires that they be put in context. Therefore, labels such as "small," "medium," and "large" should not denote importance and should be based on only the size of the correlation. For example, the same effect size of $r = .20$ would be interpreted as being much more important if the dependent variable is heart failure compared to self-reported job dissatisfaction on a 7-point Likert-type scale.

authors asked participants to record the time they spent on meetings and high- and low-priority activities and to report their weekly subjective assessment of effectiveness at work. The main effect of the intervention, the authors found, was a marked increase in time spent on high-priority tasks. With no control group and a sample of only four people, however, results from this study provided preliminary evidence only. Subsequent research by Claessens et al. (2004) and Nonis, Teng, and Ford (2005) demonstrated a positive relationship between time management and performance ($r = .33$ and $r = .25$, respectively) but similarly relied on people's self-reported performance (i.e., employees were asked to assess their own performance compared to that of colleagues along such dimensions as customer relations, communication, and job-related expertise).

Conclusions about the positive effects of time management on performance have not been consistent when studies relied on other types of designs and measures. For example, Macan (1996) used supervisory ratings (as opposed to self-reports) in her quasi-experimental study and found that time management training failed to boost job performance.

More recently, Häfner and Stock's (2010) experimental intervention—consisting of a one-day training session featuring exercises and practical cases—revealed that time management had no impact on indicators such as timely project completion and overall performance as assessed by supervisors. Barling et al. (1996) used sales as an objective measure of performance in car dealerships and found no direct effect of time management on job performance. Research by Käser, Fischbacher, and König (2013) showed that using quiet time, a time management technique in which people dedicate uninterrupted time to work on important tasks (i.e., a form of time protection), actually lowered job performance as measured by the number of errors in a given task.

Clearly, results concerning time management and performance conceptualized as results or outcomes (e.g., sales, project completion) are mixed. However, individual performance can also be conceptualized as behaviors rather than results (Aguinis, O'Boyle, Gonzalez-Mulé, & Joo, 2016; Joo, Aguinis, & Bradley, 2017). For instance, Rapp, Bachrach, and Rapp's

(2013, p. 674) study on time management and organizational citizenship behavior concluded that skilled time managers "do a better job of managing their citizenship contributions as well as the reciprocal exchanges that emerge as a consequence of these behaviors." Another study linked time management to higher levels of creativity (Zampetakis et al., 2010). Last, a handful of experiments have shown time management training to reduce procrastination (Van Eerde, 2003; Häfner, Oberst, & Stock, 2014).

In sum, the existing evidence suggests a complex relationship between time management and performance. Time management seems to have more consistent effects on performance defined as behaviors compared to performance defined as results or outcomes. In what follows, we outline novel perspectives on time management that will allow us to discuss and interpret the findings highlighted above.

INTEGRATING INSIGHTS FROM SOCIOLOGY, PSYCHOLOGY, AND BEHAVIORAL ECONOMICS

The mixed results described in the previous section mean that we need to better understand the dynamics of time management. To do so, we focus on three research perspectives: time norms and structures, individual time-related differences, and temporal decision making. Each of these perspectives addresses often-neglected aspects in time management research: Time structures and norms consider environmental influences; individual differences describe how time preferences, beliefs, and attitudes affect time management behaviors; and temporal decision making sheds light on the underlying dynamics of time management itself. By virtue of their focus on different levels of analysis, the perspectives we offer pave the way for bridging micro and macro domains (Aguinis, Boyd, Pierce, & Short, 2011) in future time management research. We elaborate on each of these three perspectives in what follows.

Time Structures and Time Norms

Macan (1994) found a relationship between job type and time management: The more structured the job (e.g., maintenance staff), the less likely people were to engage in time management ($r = -.20$) or attend time management training seminars ($r = -.25$). Unsurprisingly, people who occupied highly structured jobs also reported lower levels of perceived control over time. More recently, Claessens et al. (2004) demonstrated that job characteristics such as

job autonomy and workload influenced one's perceived control of time and, by extension, job satisfaction, job performance, and stress. A subsequent study by Nonis et al. (2005) took a higher-level approach and examined the effects of national culture on time management practices. The authors found that different aspects of time management have different effects on job performance (i.e., self-reported effectiveness in customer relations, sales, and other performance dimensions) and satisfaction depending on whether employees were in the United States or Sri Lanka.

These findings highlight the importance of time structures and time norms, two key concepts in the sociology of time often overlooked in time research in the management and psychology literatures. Time structures are "those external aspects . . . that can be described more or less reliably by an independent observer" (Barley, 1988, p. 128), such as the timing, frequency, sequence, and duration of events (Flaherty, 2003; Moore, 1963; Zerubavel, 1976). Business hours, project timelines, cleaning schedules, and holidays exemplify time structures; they are explicit and formalized. Time structures affect individual time management by laying out a system around which people can organize their time. For instance, when an employee manages her time, she has to take into account her team's deadlines and the organization's hours of operation. Even global entrepreneurs (Markman, Devinney, Pedersen, & Tihanyi, 2016), who seemingly enjoy unfettered autonomy, must operate within the bounds of their international clients' different time zones.

Time norms, in contrast, are intangible and shared patterns of expected temporal activity (Ancona, Goodman, Lawrence, & Tushman, 2001; Bergmann, 1992) that become more salient once they are breached. They constrain time management behavior through social pressures. For instance, an employee may want to quickly wrap up his sales pitch and leave the office early, but unwritten time rules dictate that a meeting with an important client should not be rushed lest the client take offense at being given short shrift. What distinguishes time norms from time structures is the moral connotations attached to time norms (Zerubavel, 1979a, 1979b). A team leader's proposal to set a project deadline on May 23rd (i.e., an element of time structure) might arouse disagreement among team members, but they will likely not think of the deadline as a moral issue. In contrast, a supervisor can afford to arrive 15 minutes late to a meeting because lateness signals power and status (i.e., a time norm); a direct report

running late, however, signals lack of assiduity and commitment, both of which are typically judged from a moral standpoint.

We contend that time norms influence individual time management in two ways. First, a time norm breach, such as calling one's supervisor at 3 a.m. or leaving work 20 minutes early in a "workaholic" culture, can elicit strong reactions from peers, with substantial consequences for the violator (e.g., loss of reputation, ostracism, and even termination). Thus, time norms act as a deterrent for engaging in temporal behaviors that are frowned upon. Second, even in the absence of prohibitive sanctions, time norms affect time management by making individuals take certain behaviors for granted. Taken-for-grantedness ensures adherence to local customs. Such adherence to time norms is mainly done through early socialization (Ancona, Okhuysen, & Perlow, 2001; Berger & Luckmann, 1966; Schneider, Ehrhart, & Macey, 2011) and is, over time, maintained through habit.

Time structures and norms operate at many levels of analysis, and thus afford a conceptual framework to study the dynamics of time management beyond the individual level. In what follows, we offer examples of how time structures and norms influence time management at the team, organization, and country levels. As a preview, Table 3 includes a summary of the discussion that follows.

Team level. Barker's (1993) ethnographic study revealed that teams tend to work out rules that, over time, ossify into structures that constrain the behavior of existing members and newcomers. Many such structures are time-based, which shouldn't be surprising because a defining feature of teams is interdependence (Cannon-Bowers & Bowers, 2011), and the best way to ensure seamless interdependence is temporal coordination (Janicik & Bartel, 2003; Okhuysen & Bechky, 2009). This is why teams devise sundry time structures to control team members' time management. As a rather drastic example, a participant in Barker's (1993, p. 428) study reported that "if you are more than five minutes late, you're docked a day's pay." Here, the team had come up with a strict time structure (i.e., work starts at a certain time and you can't be more than five minutes late) that affected individuals' time management choices. By deducting a whole day's pay for a five-minute delay, the team also implicitly established a draconian norm of punctuality. The time norm conveyed a clear message to existing team members and newcomers: "Our time is extremely precious, so you had better show up at 8 o'clock sharp and not waste a single minute." In other words, what seemed like a simple rule (i.e., if you're more than 5 minutes late you lose your day's pay) was in reality a manifestation of the team's normative view of time use (i.e., we expect you to make optimal use of your time) that could dramatically affect a person's time management choices.

Organization level. Like teams, organizations use time structures to align the efforts of employees with organizational goals. The primary time structure in organizations is hours of operation (e.g., 9 to 5), and organizations increasingly experiment with different ways to structure those hours. Intel, for instance, had 300 engineers turn off their communication devices and pin "do not disturb" signs to their office doors every Tuesday morning for four hours (Stone, 2008). The purpose of this "quiet time" practice was

TABLE 3
Summary of Why Time Structures and Time Norms Affect Time Management at Different Levels of Analysis

Level of analysis	Time structures	Time norms
Team	Teams agree on rules via consensus. Such rules can be time-related (e.g., work starts at 8 a.m. sharp) and influence the time management behaviors of individual members.	Teams develop implicit time-related norms that can constrain individual time management (e.g., time is precious in our team, and wasting it will be severely punished).
Organization	Organizations use time structures (e.g., business hours, project timelines) to standardize and control individual time management practices.	Through socialization and reward systems, organizations instill time norms in employees to channel their individual time management practices toward organizational goals.
Country	Cultures and institutions have different ways of organizing time—hence the differences in time zones, business days, and other time structures across countries and institutions. Individuals such as travel executives and global entrepreneurs must be mindful of those differences to seamlessly coordinate their global operations.	Different cultures and institutions have wildly different norms with regard to time. To avoid conflict, the frequently traveling employee must be time-culturally savvy.

to determine whether four hours of undisturbed work (i.e., a time structure) would affect productivity and creativity. Perlow (1999) conducted a similar intervention (also dubbed "quiet time") on software engineers at a Fortune 500 company. The intervention, she found, had tremendous implications for time management. In her words, "the engineers discovered that they were not well prepared to work alone and needed help from a colleague to continue. It often turned out that what they needed could easily have been prepared ahead of time, but the engineers were not used to planning ahead. By the third phase, they indicated that they were more accustomed to quiet time and were better able to prepare for non-interactive periods" (Perlow, 1999, p. 73).

Organizational time norms, too, affect individual time management. But, because time norms are not typically explicit or formalized, they can be difficult to quantify and study. Nevertheless, Schriber and Gutek's (1987) study uncovered a set of time norms that made up the time cultures of the organizations in their sample. Such norms included expectations regarding punctuality, emphasis on scheduling and deadlines, temporal boundaries between work and home, work speed, and autonomy of time use. More recently, Burt et al. (2010) developed a scale to measure the extent to which organizational norms facilitate time management practices. Items include such statements as "Productive use of time is a key value" and "Making time to plan the day's work is encouraged." Such norms have direct implications for individual time management, and the authors found that employees in organizations with less "time management–friendly" norms had higher stress and turnover intentions.

Country level. Global entrepreneurs (Markman et al., 2016), traveling executives (DeFrank, Konopaske, & Ivancevich, 2000), virtual team members (Malhotra, Majchrzak, & Rosen, 2007), and employees on international assignments (Shaffer, Kraimer, Chen, & Bolino, 2012) must all adjust their time management practices to take into account different time zones, business hours, and how other time structures vary around the world. But an even more complex terrain to navigate is that of time norms in foreign cultures (Graham, 1981; Hofstede, 2001; Levine & Norenzayan, 1999). Executives must factor in, for example, that being 45 minutes late to an official meeting is considered acceptable in Mexico. When invited over for dinner in Greece, it is rude to ask locals for a specific dinner time; what matters is that one shows up, not when (Hall, 1959). In Brazil, a country characterized by high in-group culture,

foreign team leaders are expected to spend enormous amounts of time with team members and cajole people in positions of power to be successful (Javidan, Dorfman, de Luque, & House, 2006). International entrepreneurs must similarly keep in mind that different cultural and institutional contexts have different time orientations, "potentially influencing entrepreneurs' tenacity and persistence as well as investment horizons when making investments and resource allocations" (Zahra & Wright, 2011, p. 73). Such differences in time orientations can also foster varying levels of perceived urgency, which influence entrepreneurs' priorities and time management choices (Zahra & Wright, 2011).

In summary, the above examples highlight the importance of using time structures and norms as a lens to study time management at the team, organization, and country levels of analysis. Time structures and norms, however, are not immutable. We mentioned earlier that clock time, calendars, weekends, and so on are social constructs, which means they are changeable. In other words, while higher-level time norms such as organizational culture can affect individual time management (i.e., top-down influence; Bluedorn, 2000), individuals can also change higher-level norms and structures through concerted action (i.e., bottom-up influence; Perlow, Mazmanian, & Hansen, 2016) and make their environment more adapted to their time management style.

Individual Differences

Individual differences in personality, values, and beliefs are known to influence various organizational outcomes such as job satisfaction and performance (Barsade & Gibson, 2007; Sackett, Lievens, Van Iddekinge, & Kuncel, 2017). Similarly, individual differences—specifically, individual differences in time attitudes, beliefs, and preferences (Vinton, 1992)—play a critical role in affecting time management outcomes.

Time-related individual differences abound. For instance, perceived control over time (Macan et al., 1990), sometimes called temporal self-efficacy (Britton & Tesser, 1991), refers to people's belief that they are in charge of their time. This belief has been well researched from a time management perspective, but it is often studied as an outcome of time management (Häfner & Stock, 2010). Other time-related differences might better predict time management outcomes. For instance, some people prefer

to do one thing at a time; others prefer to multitask. The latter have a *polychronic time preference*; the former have a *monochronic time preference* (Bluedorn, Kaufman, & Lane, 1992; Hecht & Allen, 2005). These differences in individual preferences affect time management outcomes: Monochronic people are more upset by schedule changes and engage in more planning; polychronic people deal better with schedule changes and can easily integrate different activities (Kaufman-Scarborough & Lindquist, 1999).

In the work–life balance literature, there is a distinction between "segmenters" and "integrators": The former like to set boundaries between work time and family time, while the latter prefer to blend the two (Nippert-Eng, 1996; Rothbard & Ollier-Malaterre, 2016). It is easy to imagine that time management training will have different outcomes depending on whether the trainee is a segmenter or an integrator—the former will benefit from a rigid style that sets boundaries between work and home, while the latter will require a flexible time management style that facilitates seamless integration of both domains.

In short, there is a host of time-related individual differences such as time preferences (i.e., polychronic vs. monochronic preference), time boundary styles (i.e., segmenting vs. integrating), and others (e.g., temporal orientation; Shipp, Edwards, & Lambert, 2009; Zimbardo & Boyd, 1999). Researchers need to pay more attention to how individual differences—especially those related to time—can moderate or mediate (Aguinis, Edwards, & Bradley, 2017) the effects of time management on various outcomes. To illustrate, we next discuss the individual difference of temporal awareness in greater detail.

Temporal awareness. Temporal awareness is the belief that time is a real, finite resource that needs to be budgeted. To avoid any conceptual confusion (Suddaby, 2010), we emphasize that temporal awareness is not time perception (i.e., people's subjective perception of time passing; Flaherty, 1999), but a belief regarding the nature of time.

Half a century ago, Drucker (1967) observed that high-performing executives think primarily in terms of time, not activities or strategies. Such executives, he noted, have a sense of how much time they have and where their time actually goes. A series of experiments by Soman (2001) showed that many people can engage in rational budgeting for money but not for time, suggesting that people do not readily conceive of time as a finite resource.

Temporal awareness is not mere time tracking or temporal accounting, although these two behaviors are likely outcomes of temporal awareness. Rather, temporal awareness is the understanding that there are only so many hours in a day and that activities come at a temporal cost, hence the need for budgeting—*temporal awareness is a resource-based conception of time.* Granted, most people would agree with the statements "time is finite" and "time should be budgeted like money," but not everyone actually conceives of time that way in daily life.

Low temporal awareness (i.e., weak or nonexistent belief that time is a resource) severely undermines people's ability to manage time effectively, much like an inability to see credit card funds as *credit* leads to poor finance management. People high in temporal awareness think of their available time as a time budget—finite and nonrenewable. The currency of their psychological economy is time. How much will this movie cost me in time? Can I reasonably expect to finish this report before attending the meeting? How long will it take you, the reader of our manuscript, to finish it? These are the kind of questions that temporally aware individuals routinely ask themselves. As a result, temporal awareness can influence how and to what extent people manage their time. A person high in temporal awareness, for instance, might have more of a proclivity for time tracking and scheduling than someone low in temporal awareness, who might use more of an improvisational time management style. People with high temporal awareness, by virtue of thinking mainly in terms of time, might also be more naturally drawn to time management as a way to implement their preference for a time-based organization system.

In short, people high in temporal awareness will likely enjoy better time management outcomes. The chief mechanism, we contend, is a reduction of time-based conflict, defined as the impossibility of completing multiple activities because of insufficient time (Greenhaus & Beutell, 1985). Indeed, high temporal awareness helps people make more realistic assessments of what they can and cannot do. When people know how much time they have and treat time as a resource, they are less likely to commit to new activities requiring more time than they actually have. As a result, people high in temporal awareness are likely to experience lower levels of time-based conflict between their activities. The reduced level of conflict between a person's different roles and activities may, in turn, increase well-being and performance.

Having discussed perspectives and insights regarding time structures and norms, and the influence

of individual differences (e.g., temporal self-efficacy, monochronic vs. polychronic time preference, segmenters vs. integrators, temporal awareness), we now turn to how decision making, when applied to time decisions, can affect time management.

Temporal Decision Making

As our definition of time management implies, time management is a form of temporal decision making. This means, fundamentally, that time management is about making decisions—conscious or otherwise—relating to how we use our time. In this section, we discuss how temporal decision making—the examination of how people make time-related decisions—enhances our understanding of time management.

The time management literature implicitly adopts a "rational time manager" model, according to which individuals make optimal time decisions. Other fields, such as economics and strategic management, have also traditionally treated individuals as rational, optimal decision makers. However, developments in behavioral economics (Kahneman, 2003) and strategy-as-practice (Vaara & Whittington, 2012) have upturned some of these assumptions. In the same way, insights from the temporal decision-making literature can elucidate how people actually manage their time. Our goal is not to comprehensively survey the field of temporal decision making. Rather, we aim to illustrate how a synthesis of findings in temporal decision making can inform our understanding of time management by drawing on a few key perspectives and insights.

Temporal escalation of commitment. We already mentioned Soman's (2001) experiments, which showed that people do not mentally account for time the way they do money. Another result from Soman's (2001) experiments was that the sunk-cost effect—a well-established psychological bias that induces people to throw good money after bad (Drummond, 2014)—seems to hold for money but not for time. Interestingly, when experimental manipulations made people more likely to account for time (e.g., by providing a wage rate or lecturing participants about economic approaches to time), the sunk-cost effect appeared. Results of this study draw attention to a potentially counterproductive effect of time management training. Specifically, when people engage in time management, they are more likely to account for time in a systematic way. According to Soman's study, this means that time managers are more likely to fall prey to the temporal sunk-cost bias. As a result,

this might hamper people's ability to "stop unprofitable routines and activities" (Britton & Tesser, 1991, p. 409) and lead to a counterproductive escalation of commitment—that is, throwing good time after bad. A key implication we can draw from Soman's (2001) work is that time management training can have unintended consequences, such as fostering a sunk-cost bias that can undermine the very purpose of time management.

Value of time. Another important aspect of temporal decision making is time valuation. How we value our time bears relevance to how we manage it. Consider independent contractors, who are often touted as the epitome of professional freedom (Aguinis & Lawal, 2013; Barley & Kunda, 2006). Contractors tend to sell their services by the hour. As a result, they are intensely aware of the economic value of their time and face "an ever-present choice of how to spend every hour. . . . When choosing how to spend their time, contractors could calculate to the penny the opportunity costs of every unbilled or leisure hour" (Evans, Kunda, & Barley, 2004, p. 21). The value people place on their time is thus consequential for time management because time management may induce people to consciously or unconsciously strive to make the most of their time, to get the most bang for their minute. This may be a potentially detrimental side effect.

DeVoe and Pfeffer (2007), for instance, concluded that because hourly payment makes people keenly aware of the value of their time, it makes non-remunerative activities, such as volunteering, much less attractive. Similarly, the higher the perceived economic value of time, the more people feel pressed for time (DeVoe & Pfeffer, 2011), which defeats the very purpose of time management. Counterintuitively, therefore, being overly conscious of time's economic value may not lead to effective time management. If anything, it may make people more harried. In support of this conclusion, research shows that being generous with one's time (e.g., devoting time to helping people) actually makes people feel as though they have more time, not less (Mogilner, Chance, & Norton, 2012).

We have barely scratched the surface of how temporal decision making can inform time management, and a full review of the temporal decision-making literature is beyond the scope of this paper. However, time is a very peculiar resource with unique characteristics, warranting more attention to temporal decision making. We elaborate on this point in what follows.

The importance of a temporal approach to decision making. We believe that time deserves its own

decision-making literature because it is a resource like no other. Unlike money, time is possessed in equal amounts by everyone (McGrath & Rotchford, 1983) but is still subject to theft in the workplace by people who tend to non-work-related tasks during work hours (Brock, Martin, & Buckley, 2013; Martin, Brock, Buckley, & Ketchen, 2010) and abuse by people who excessively solicit coworkers' time (Perlow, 1999). Unlike energy, time is not renewable, recoverable, or substitutable (Fritz, Lam, & Spreitzer, 2011; Jaques, 1982; Moore, 1963). Furthermore, the value of time is ambiguous. Everybody knows that a dollar is a dollar, but an hour can mean different things to different people (Okada & Hoch, 2004).

Time is also unique by virtue of being *the* fundamental resource—people need time to acquire other resources. For example, at the individual level of analysis, people are not able to acquire new knowledge, skills, and abilities if they do not have sufficient time (Aguinis & Kraiger, 2009), which impairs their results- and behavior-based performance (Markman, 2012). At the firm level of analysis, organizations are not able to acquire valuable and inimitable resources that give them a competitive market advantage if they don't have sufficient time to do so (Perlow, 1999). Organizational actions occur in time and unfold in a path-dependent way through time, which has implications even for seemingly disconnected events such as the subsequent ventures of serial entrepreneurs (Wright, Robbie, & Ennew, 1997; Zahra & Wright, 2011). Given time's peculiar nature, then, it shouldn't be surprising that unlike other resources, time is a resource that most people have a hard time processing (Saini & Monga, 2008).

DISCUSSION

Our review of the literature suggests that the links between time management and well-being and performance are not clear; the relationship between time management and well-being exhibits much variability, and the link between time management and performance seems to depend on whether performance is measured as results or behaviors. Our review also suggests that insights relevant to the time management literature are fragmented and dispersed across various disciplines such as sociology, psychology, and behavioral economics. We proposed three novel perspectives that integrate cross-disciplinary and multilevel insights. This integration identifies several critical factors that may enhance or suppress the effects of time management and sheds light on the hitherto ambiguous links between time management, well-being, and performance.

To illustrate how our cross-disciplinary and multilevel perspectives can shed light on past research, let's focus on the link between time management and performance (see Table 2). We can start by using a *time structures and norms* lens. In her study on time management in a software engineering company, Perlow (1999, p. 69) observed that "at the end of the calendar year, in a confidential meeting, the managers ranked their software engineers. . . . For all of the top ten engineers, the comments mentioned the long hours that the engineers worked. . . . In contrast, the comments about those at the bottom of the list all referred negatively to the engineer's level of commitment as assessed by hours worked. . . . Clearly, managers noticed the hours that the engineers worked and used these observations as a criterion in ranking them." In other words, organizational time norms in Perlow's organization equate long hours with performance, a norm arguably antithetical to efficient time management. In such conditions, an employee who excels at time management might finish her job in less time than her peers and yet get a negative performance review. In such cases, empirical analyses blind to the importance of time structures and norms might wrongly conclude that time management is not related to performance.

Orpen's (1994) experiment corroborated this view. After randomly assigning a group of supervisors to an intensive, customized three-day time management training program, the author asked participants to keep track of how they spent each 30 minutes of every workday in an activity diary. The author then asked three managers familiar with the demands of the job to rate the employees' performance based on their activity diaries (i.e., a behavior-based performance assessment). Critically, activity diaries were anonymous and did not disclose whether the employee had undergone training or not. In other words, Orpen's (1994) experimental design mitigated the influence of time norms and other confounding variables by shrouding diaries in anonymity. The nature of Orpen's (1994) study might explain why it is among the rare experiments to find a clearly positive link between time management and job performance.

As a second perspective, people's individual differences, especially *time-related individual differences*, likely play a big role in whether time management boosts job performance. Consider, for instance, the fact that in some experiments

participants reported engaging in more time management behaviors after training (e.g., Häfner & Stock, 2010), while in other experiments many participants did not seem to manage their time at all after they had been trained (e.g., Macan, 1996). This could very well be due to participants' individual differences. A handful of researchers have studied the effects on time management of individual time-related differences, such as time discounting (i.e., choosing immediate small rewards over larger but delayed payoffs; Koch & Kleinmann, 2002; König & Kleinmann, 2005). Results from these studies show that people who discount time steeply engage less in time management (König & Kleinmann, 2006) and pay less attention to future deadlines (König & Kleinmann, 2007). Therefore, if these individual differences are not considered explicitly, it is difficult to conclude whether time management does influence job performance, and to what extent. Buttressing this view, Barling et al. (1996) found that while time management alone did not predict car sales (a key measure of performance among car dealers), achievement striving (admittedly not a time-related construct, but an individual difference nonetheless) significantly interacted with time management to predict job performance.

A third perspective that helps us make sense of the existing literature is *temporal decision making.* Our discussion of temporal decision making outlined how time management training itself can undermine performance. Consider Macan's (1994, p. 388) conclusion that the "size of the path coefficients ... suggests that time management training may not explain much of the reported variance in the behaviors." Consider, further, Macan's (1994, p. 389) assertion that "respondents in the present study who practiced time management behaviors such as making lists and scheduling activities did not necessarily perceive greater control over their time. ... When a person does not complete the projects listed, the perception of having little control over how time is spent may result." This relates to how framing effects—a core bias in the decision-making literature—affect our perception of time and work. Researchers have found that thinking in terms of "time spent" and "work left" is often seen as a suggestion to rev up the pace; on the other hand, "work done" and "time left" indicate that there is no need to rush (Teigen & Karevold, 2005). Depending on whether participants in Macan's (1994) study framed their projects in terms of remaining time (e.g., on a schedule) or work left (e.g., on a to-do list), their

feelings of being in control of their time varied tremendously. This is why there is a need to open the "black box" of time management training: With few exceptions (e.g., Häfner & Stock, 2010; Van Eerde, 2003), experimenters typically provide only a vague outline of the contents of time management training programs, mentioning covered topics only in passing (e.g., Macan, 1996; Orpen, 1994; Woolfolk & Woolfolk, 1986).

Consider another illustration. Käser et al. (2013) concluded that when people engaged in quiet time, their performance actually decreased. But, as the authors themselves acknowledged, the nature of the experiments heavily influenced participants' temporal decision-making processes. As the authors put it:

> In search of an explanation, we find that ... the [quiet time participant]'s performance decreases significantly when the number of time spans with interruptions and without interruptions increases ($r = -.42$, $p < .05$). This means that people who have chosen to frequently alternate between interruption time and non-interruption time performed more poorly than people who divided their time into fewer and therefore longer time spans with and without interruptions. The mean number of time spans with or without interruptions ... lasted 4.7 minutes. A theoretical explanation for the poorer performance might be that selecting more and therefore shorter time spans without interruptions generated a higher cognitive load because this was harder [for participants] to track. (Käser et al., 2013, p. 301)

In other words, it is not quiet time per se that decreases performance; it is the frequent task switching that undermines people's temporal decision making and, by extension, their performance.

In short, the three perspectives improve our understanding of the relationship between time management and well-being and performance and afford a clear framework for making sense of the literature. Next, we turn to their potential for guiding future research.

Suggestions for Future Research

Based on our three perspectives, we offer the following directions for future research. First, future research can focus on time structures and norms. The vast majority of existing studies use quantitative methods, which seems fitting given the ostensibly practical and efficiency-oriented nature of time management. The reality, however, is that people who manage their time are, like all people, embedded in an intricate web of social relationships and constraints. To understand how the complexity

of social life influences time management, researchers need to approach time management from a complementary qualitative angle and study thick descriptions of people's experiences. Qualitative designs enable researchers to fully explore the nature, antecedents, and outcomes of time structures and norms; this could not only shed light on the dynamics of time structures and norms, but also unearth facets of time management that are yet unexplored.

In addition, the issue of time structures and norms opens the door to myriad opportunities for cross-cultural time management research. In particular, we contend that, because of cultural differences, the way a person manages time at home in no way guarantees success when transferred to another country. One way to mitigate this issue—and a promising direction for future research—would be to pair expatriates with local hosts who, as cultural mediators, can familiarize expatriates with local time norms and structures (Cooper, Doucet, & Pratt, 2007; DeNisi & Toh, 2005). Studying how expatriates and frequent travelers can better adapt to different time structures and norms can not only enhance organizational performance, but also avert the numerous pitfalls that threaten the well-being of expatriates and their families.

Second, future research could investigate the extent to which time-related individual differences, and particularly temporal awareness, affect time management. A first step in this direction would be to develop a measure of temporal awareness. Such an instrument would allow us to determine whether time management training yields better results in people with high temporal awareness. Researchers can also determine if temporal awareness alone (that is, in the absence of typical time management behaviors such as scheduling) contributes to outcomes such as job performance and satisfaction. Most important, future research can determine to what extent temporal awareness is dispositional. If temporal awareness is a crucial prerequisite for good time management, then the degree to which temporal awareness can be learned has important implications for time management training. By the same token, research can also examine how much time management itself can be learned. There is modest evidence that time management might be a dispositional aspect of individual personality (Shahani, Weiner, & Streit, 1993), but results are insufficient to draw a firm conclusion. More recently, Malatras et al. (2016) showed that people who grow up in stable families tend to have better time management skills.

One way to conclusively assess the extent to which temporal awareness and time management are dispositional constructs would be to conduct a twin study (Boomsma, Busjahn, & Peltonen, 2002).

Third, as we noted earlier, the field of management in general would benefit from more research on temporal decision making. For instance, we should not assume that time management training is necessarily beneficial because it can foster decision-making biases—such as the sunk-cost effect (Soman, 2001)—that ultimately undermine time management outcomes. Furthermore, existing research on time valuation—a key parameter in temporal decision making—draws attention to an important methodological implication for time management research. Specifically, do people who take the time to participate in time management studies differ significantly from people who don't? In other words, is there a potential nonresponse bias (Rogelberg & Stanton, 2007) inherent to time management research? We believe there is.

Goodman, Cryder, and Cheema (2013) compared Mechanical Turk (MTurk, Amazon's online labor system) participants with people from a middle-class urban neighborhood on various measures. They found that the MTurk participants valued their time less than the offline sample, which is not that surprising given that the MTurk participants agreed to complete a 15-minute survey for a paltry $0.20. As research on time valuation suggests (e.g., DeVoe & Pfeffer, 2007), this means that people who value their time more might be less likely to participate in time management studies, which, as a result, creates a nonresponse bias and compromises the validity of results. For instance, in Macan's (1996) quasi-experiment, there were significant preexisting differences between participants who volunteered to participate in time management training and those who did not. One way to address this would be to devise shorter time management measures—Macan et al.'s (1990) TMB scale comprises 46 items; Britton and Tesser's (1991) TMQ measure contains 35. Shorter scales would likely attract participants who would have otherwise declined to take part in studies they deemed too lengthy.

Implications for Practice

Time management is a topic well suited to bridge the practice–research gap (Bansal, Bertels, Ewart, MacConnachie, & O'Brien, 2012). We offer some practical observations based on the three perspectives advanced in our article.

First, time management training is wildly popular in organizations and is often touted as a silver bullet that will fix sluggishness and other corporate woes. However, this is an ill-advised approach to time management that will likely fail if it ignores organizational time structures and norms (Jacobs & Gerson, 2004; Perlow, 1999). Indeed, the literature we reviewed suggests that many time management interventions fail to translate into job performance. As we have discussed, chief among the reasons for this are the organizational time structures and norms that hinder employees' effective time management. Employees often have to contend with temporal expectations from their managers and coworkers that, in fact, *discourage* good time management practices (e.g., Perlow, 1999).

From an employee's perspective, organizational time structures and norms are hard to resist, let alone change, and this can often lead to frustration and dysfunctional turnover. Leaders, on the other hand, can reengineer their organization's time structures and norms in a way that accommodates effective time management practices. As a first step, leaders can use existing measures of time structures and norms (e.g., Burt et al., 2010; Schriber & Gutek, 1987) as a diagnostic tool. Judging by the available evidence, regardless of whether people manage their time or not, organizational cultures that are more time management–friendly tend to cause less stress and turnover intentions among employees (Burt et al., 2010), which further highlights the importance of time structures and norms for practitioners.

Second, time-related individual differences may or may not lead to positive time management outcomes. As the literature suggests, time management is not for everyone (e.g., Barling et al., 1996). This does not mean that time-related individual differences cannot be changed. Zimbardo and Boyd (2008), for instance, argued that it is possible for present-oriented people (i.e., people who live in the moment, like to take risks, and loathe thinking about the future) to become more future-oriented (i.e., become more forward-thinking, plan ahead, take more calculated risks, and so on) with proper training. For this reason, time management programs should expand their curriculum to more than just traditional aspects of time management such as to-do lists and scheduling and include modules that target time-related individual differences. For example, training programs may include content for people low in temporal awareness to make them more mindful of the "resource" dimension of time.

Another strategy would be to tackle individual differences not by changing them but by screening them out. Different organizations have different time norms that may or may not accommodate certain time-related individual differences. This suggests a need to consider person–environment fit (Edwards, Cable, Williamson, Lambert, & Shipp, 2006) from a temporal perspective (Francis-Smythe & Robertson, 2003; Kaufman, Lane, & Lindquist, 1991). For human resource management practitioners, this means that employee selection can be used to screen out candidates whose time attitudes, beliefs, or preferences do not fit the organization's time norms. Selection, in some cases, might be beneficial because diversity in time-related individual differences can backfire—a recent body of research shows that temporal diversity in teams can hurt performance (Mohammed & Nadkarni, 2011).

Third, developers of time management training programs might want to draw lessons from the temporal decision-making literature. As time management research shows, the "mechanics" of time management (e.g., using to-do lists, schedulers, and calendars) are not always related to time management outcomes, suggesting that time management tools will likely prove ineffective if people make counterproductive time decisions. When people become more mindful of the potential biases looming over their decision making, they become less likely to fall prey to them. The possibility of altering people's likelihood to succumb to a temporal decision-making bias has been shown experimentally (e.g., Soman, 2001), which offers hope that time management training can be improved if developers incorporate decision-making elements in their programs.

CONCLUSION

Everybody needs to manage time. Entrepreneurs, executives, expatriates, and academics alike depend on it to organize their professional and personal lives. However, our review of the literature reveals a rather scattered body of knowledge and inconsistent findings regarding the relationship between time management and the critical outcomes of well-being and performance. By integrating time management research from different domains, we distilled three perspectives that help us make sense of the mixed findings: time structures and norms, time-related individual differences, and temporal decision making. With the advent of the knowledge economy, work has become ever more flexible and the burden of time management is gradually shifting from organizations to employees, making

time management an increasingly vital skill. We hope our manuscript will help make time management research accessible to a wide range of scholars and that the perspectives offered here will stimulate much-needed research and practices on this important topic.

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