

TOWARD A THEORY OF SUBJECTIVE TIME

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ABSTRACT

Subjective time plays an essential role in management scholarship, yet remains undefined and theoretically undeveloped. This paper advances a theory of subjective time by addressing three key questions: What is subjective time? How does it operate? And when does it diverge from clock time? We define subjective time as the mental representation and perceptual experience of time and advance management theory not only by exploring subjective time as a concept, but also by outlining the circumstances under which subjective time can be a hindrance or an asset to organizational functioning.

INTRODUCTION

Time has played a foundational role in management thought and theory (e.g., Ancona, Okhuysen, & Perlow, 2001; Drucker, 1967; Smith, 1799; Taylor, 1911). Yet, subjective time, which we define as the mental representation and perceptual experience of time, remains understudied in part because its theoretical conceptualization is not well developed (Mosakowski & Earley, 2000; Shipp & Cole, 2015). Most organizational theories are built on clock-time assumptions (Barnard, 1938; Kunisch, Bartunek, Mueller, & Huy, 2017; March & Simon, 1958; J. D. Thompson, 1967), including punctuality, scheduling, financial growth, task efficiency as indicated by amount of time spent on a task, long-term productivity, and promptness (Adam, 2003; Schriber & Gutek, 1987). While these elements matter for performance metrics, they overlook the fact that people in organizations do not experience time in a clockwork fashion but, rather, subjectively and non-linearly (Reinecke & Ansari, 2017).

Indeed, people's subjective experience of time does not always align with clock-time expectations. While this misalignment may result in positive outcomes, it can also undermine organizational goals. For instance, managers tend to overestimate how long a project will take and make poor financial decisions such as hiring flat-fee (instead of time-metered) contractors. For instance, managers tend to overestimate the duration of project timelines and, as a result, hire flat-fee (instead of time-metered) contractors (Goswami & Urminsky, 2018). This example is only one among many, and highlights why understanding what subjective time is, how it operates, and when it deviates from clock time is a pressing issue that stands to significantly advance management theory.

Our paper aims to contribute to management theory in three ways. First, we introduce a definition of the concept of subjective time. Second, we draw on the sociology of time to explain

how subjective time operates. Third, we outline the organizational conditions under which subjective time deviates from clock time, thereby shedding light on the source of numerous organizational issues that cannot be fully explained by existing management theory. We conclude with theoretical and practical implications of our theoretical framework.

WHAT IS SUBJECTIVE TIME?

Defining subjective time

We define subjective time as the mental representation and perceptual experience of time. We use the term ‘time’ in its broadest sense, covering the many forms temporality can take (Bluedorn & Denhardt, 1988; Kunisch et al., 2017; van Tienoven, 2018). For instance, time can refer to a specific point in time such as a deadline, or a continuous event such as the experience of attending a 3-hour meeting (Ancona et al., 2001). Time can also refer to socially constructed time, such as holidays and clocks (Yakura, 2002) or to biological and physical rhythms, such as circadian clocks (Barnes, Lucianetti, Bhave, & Christian, 2015) and seasonal cycles (Barnes & Wagner, 2009). Finally, time can be used to convey messages, such as when employees deliberately work fast to impress others (Bonaccio, O’Reilly, O’Sullivan, & Chiochio, 2016).

Operationalizations

To avoid conceptual confusion (Suddaby, 2010), we note that subjective time is a concept, not a construct. That is, subjective time is a hypothetical, rather than an empirical entity (Podsakoff et al., 2016). This distinction is necessary to avoid fallacious reifications: subjective time, *per se*, is not a construct that can be measured. Rather, subjective time is a hypothetical umbrella that covers multiple constructs and empirical operationalizations.

The management literature has covered such constructs and is increasingly introducing new ones (see Tang, Richter, & Nadkarni 2019 for a review). For instance, preference for segmentation is a construct that captures the extent to which people desire a strict separation between work and non-work time (Ashforth, Kreiner, & Fugate, 2000; Rothbard & Ollier-Malaterre, 2016). Similarly, time urgency captures employees’ preference for speed and haste when completing daily work (Conte, Mathieu, & Landy, 1998; Greenberg, 2002).

Along with formal constructs, management scholars have identified a wide variety of phenomena and paradoxes. For example, the autonomy paradox describes how employees who adopt mobile technologies to gain autonomy over time (e.g., smartphones and laptops), ironically end up working all the time (Mazmanian et al., 2013). Relatedly, time theft captures a phenomenon where employees engage in non-work activities (e.g., making vacation plans) during work hours (Martin, Brock, Buckley, & Ketchen, 2010). As a final example, scholars are increasingly interested in the time-is-money effect and have found that workers who think of time as money, or who are led to think of time as money, experience higher levels of stress (Pfeffer & Carney, 2018), and are less likely to volunteer their time (DeVoe & Pfeffer, 2007, 2011).

These constructs, phenomena, and paradoxes have significantly advanced our knowledge of what subjective time is and how it might operate. Yet, these insights remain scattered and disconnected, bereft of an overarching conceptual framework. In fact, some of the studies mentioned above link their insights to the broader concept of subjective time only implicitly,

rather than explicitly (e.g., DeVoe & Pfeffer, 2007; Yam et al., 2014). The lack of a coherent conceptual agenda impedes the ability to advance our knowledge of how subjective time affects organizational dynamics. To facilitate future inquiry into subjective time, our paper conceptually integrates past research and introduces a theoretical framework regarding the main components of subjective time and how they operate.

HOW DOES SUBJECTIVE TIME OPERATE?

Conceptual components of subjective time

The four conceptual components of subjective time are ideal types (Doty & Glick, 1994); yet, there can be conceptual overlap and interactions between these components.

Symbolic time. Symbolic time captures the experience and understanding of time as a code through which individuals convey messages (Zerubavel, 1987). As Bonaccio et al. (2016, p. 1052) notes “walking speed, work speed, promptness, and punctuality ... communicate meaning about how time is perceived, interpreted, and used by a person.” Symbolic time captures not only how individuals convey messages but also how others construe our temporal behaviors. For instance, in news organizations, the time allocated to a newscaster signals importance and status, such that high-status newscasters get more airtime (Schlesinger, 1977). Similarly, supervisors tend to perceive employees who show up early at work as more conscientious and give them better performance appraisals, irrespective of the total number of hours worked or objective job performance (Yam, Fehr, & Barnes, 2014). Thus, symbolic time—the meanings that people ascribe to time-related behaviors—is a crucial component of subjective time and, as we argue later, has significant implications for management theory.

Internal time. Internal time refers to individuals’ cognitive and emotional differences in the experience of time (Flaherty, 1999). For instance, temporal focus captures the extent to which individuals characteristically think about the past, the present, or the future (Shipp & Aeon, 2019; Shipp et al., 2009). Similarly, synchrony preference is an individual difference that describes the willingness to adapt one’s pace and schedule to that of their colleagues and peers (Leroy et al., 2015). The chief function of these characteristics is to help individuals make sense of their personal experience of time (LaBianca et al., 2005) and are thus highly relevant to behaviors and attitudes within organizations.

Biomechanical time. Biomechanical time captures the influence of biological (e.g., sleep), physical (e.g., seasons), and mechanical (e.g., digital devices) temporalities on people’s experience and mental representation of time. In so doing, biomechanical time combines three temporal orders featured in the sociology of time: the biological temporal order (e.g., Fine, 1990), the physical temporal order (e.g., Melbin, 1978), and the mechanical temporal order (Adam, 1995; Wajcman, 2015). Indeed, the biological reproductive clock can sometimes delay or even terminate female workers’ career timeline compared to their male counterparts (Brown & Patrick, 2018). Physical factors can also affect people’s experience of time: tardiness increases during the winter (Zerbini et al., 2019) and people tend to do things faster in colder, versus warmer, climates (Levine & Norenzayan, 1999). Technology also affects subjective time. For instance, commuters’ sense of time can be shaped by how much battery life is left on their devices (Robinson & Arnould, 2019). While the mechanical temporal order plays an increasingly dominant role in organizational life (e.g., the ubiquity of technology in work settings), the biological and physical order continue to influence workers’ subjective time.

Instrumental time. Instrumental time captures how individuals' strategic use of time affects their personal experience of subjective time. It is derived from the sociological concept of time work, defined as personal efforts taken to change one's experience of time (e.g., manipulating the duration, frequency, sequence, timing, and scheduling of activities; Flaherty, 2003). Time can be seen as an instrument to achieve one's goals. In management research, several constructs have been introduced to reflect this perspective, including time management (Aeon & Aguinis, 2017), time structuring (Feather & Bond, 1983), pacing (Gersick, 1994), and temporal expansion (Kirchmeyer, 1992). While symbolic time affords agency to convey messages through temporal behaviors, it is constrained by what time norms in organizations and society allow and proscribe. Similarly, internal time captures individual differences that may, in great part, be due to socialization and upbringing, while biomechanical time captures factors that typically lie outside of an individual's agency. Thus, the distinguishing feature of instrumental time is the agency that it affords over time (Flaherty, 2011). Instrumental time is becoming more crucial for individuals as organizations offer more job autonomy (Wegman et al., 2018) and an increasing number of people work jobs with nontraditional hours (Cappelli & Keller, 2013).

WHEN DOES SUBJECTIVE TIME DIVERGE FROM CLOCK TIME?

Organizational clock-time assumptions

Clock time refers to a way of understanding time based on linear, equivalent durations measured by clocks and calendars (Martineau, 2015). Although mechanical clocks are a relatively recent invention (Landes, 1983), organizations have been using clock time to carry out everyday activities long before the Industrial Revolution (e.g., Le Goff, 1980). Clock time does not simply refer to the time that is measured by the clock. Neither is it limited to the use of schedules, calendars, deadlines, and timelines. Instead, clock time fundamentally constitutes a time orientation. It is a way of thinking about time that, like all ways of thinking, features underlying assumptions, which we describe below. Deviations from clock time reflect departures from explicit organizational time structures (Orlikowski & Yates, 2002) such as deadlines and timelines (Yakura, 2002), and from implicit expectations, norms, and assumptions (Ancona, Goodman, Lawrence, & Tushman, 2001; Schriber & Gutek, 1987).

Sociologists have identified at least eight assumptions underlying clock time in industrial settings (Adam, 2003). The first four assumptions refer to the nature of time itself: time is scarce, quantifiable, exchangeable, and equivalent to money. The other four assumptions capture values, that is, beliefs about what is good and desirable, including speed, efficiency, long-term productivity, and predictability. Together, these assumptions make up the time orientation known as clock time (Bluedorn & Denhardt, 1988; Brunelle, 2017; Lee & Liebenau, 1999) and are meant to allow for the seamless coordination, synchronization, and streamlining of activities that undergird organizational performance. To understand when subjective time clashes with clock time, we outline the conditions that foster the discordance between each component of subjective time (e.g., symbolic time) and organizational clock-time expectations.

Symbolic time and uncertainty

We posit that the misalignment between symbolic behaviors such as "face time" and clock time expectations at work emerge when performance expectations are unclear and

ambiguous. In this case, the discrepancy between subjective time and clock time stems from a failure of the organization to deal with work uncertainty by clarifying temporal expectations (Barley, 1988). In the absence of clear performance metrics, employees navigate uncertainty and signal their commitment and productivity by engaging in symbolic behaviors such as staying in the office well beyond contracted hours, which in turn undermines employees' performance and well-being (Cha & Weeden, 2014; Moen, Kelly, & Hill, 2011; Perlow & Kelly, 2014). The effects of workplace uncertainty are not distributed equally in organizations. Research by Yoon, Donnelly, and Whillans (2019) shows that women are more reluctant than men to ask for more time on flexible deadlines because they worry managers will perceive them as incompetent, even though managers rarely think so. Similarly, Chan, Kachelmeier, and Zhang's (2017) experiment found that participants worked more efficiently when performance appraisals involved clear metrics that rewarded actual output rather than time spent on tasks. Symbolic time can thus help advance management theory by providing new insights about performance appraisal and gender inequality in the workplace. Accordingly:

Proposition 1: Symbolic time will diverge from clock time under conditions of workplace uncertainty.

Internal time and temporal leadership

We approach the discrepancy between internal time and clock time from the temporal person-organization fit perspective (Ancona, Okhuysen, Perlow, 2001; Kaufman, Lane, Lindquist, 1991; Francis-Smythe & Robertson, 2003). According to this view, when individuals' internal time clashes with clock-time assumptions, organizational performance tends to decrease.

The reason why internal time and clock time deviate in organizations is not individual differences per se. Given that there is a plethora of time-related individual differences that can vary dramatically from one person to another, it would be unrealistic to expect personnel selection to create a workforce that is homogenous in terms of time-related individual dispositions. Rather, we propose that the divergence between internal time and clock time is due to how effectively organizations manage individual time-related differences. A recent stream of research suggests that temporal leadership—the ability of organization leaders to get everyone on the same temporal page despite individual differences (Chen & Nadkarni, 2017; Mohammed & Alipour, 2014)—could help synchronize internal time with clock time. In practice, temporal leadership consists of “leader behaviors that aid in structuring, coordinating, and managing the pacing of task accomplishment” (Mohammed & Nadkarni, 2011:492) in order to arrive at a shared temporal cognition that aligns internal time with organizational clock time (Mohammed & Nadkarni, 2014). Strong temporal leadership such as reminding employees of deadlines or setting aside time for contingencies can mitigate the impact of internal time differences and align individual differences with organizational goals. This brings us to our second proposition:

Proposition 2: Internal time will diverge from clock time under conditions of weak temporal leadership.

Biomechanical time and unreflexive entrainment

Organizations sometimes become entrained (Ancona & Chong, 1996) to other temporalities in *unreflexive* ways. Temporal reflexivity refers to the ability to question and

reflect on temporal assumptions (Orlikowski & Yates, 2002). By adopting mobile technologies without proper forethought, organizations unreflexively entrain their workforce to a powerful rhythm that influences workers' subjective time in ways that are at odds with clock-time assumptions. For instance, the introduction of email systems in organizations has sped up communication, but managers rarely ponder the unintended consequences of email's fast pace, such as the inability to initiate tasks and exert proper leadership (Rosen et al., 2019). In order to align biomechanical time with organizational clock-time expectations, organizations must be intentional about temporal reflexivity (Orlikowski & Yates, 2002) especially when considering entrainment to more powerful temporalities. More formally:

Proposition 3: Biomechanical time will diverge from clock time under conditions of unreflexive entrainment.

Instrumental time and temporal shifting

Individuals' strategic use of time can occasionally diverge from clock-time expectations. For instance, when individuals strategically schedule their free time they inadvertently create a situation where leisure and work become psychologically similar (Tonietto & Malkoc, 2016). Making leisure feel like work detracts from the well-being and productivity benefits of detaching from work (Sonntag & Fritz, 2015). Part of the reason why instrumental time sometimes fails to live up to clock-time expectations is precisely because it relies too much on clock time. A blind reliance on clock time can paradoxically run against clock-time expectations, similar to how blindly following bureaucratic rules can hinder the smoothness of bureaucracy (Blau, 1955). Accordingly, we introduce temporal shifting to capture the balancing act between clock time and non-clock time, depending on the tasks employees focus on. Low temporal shifting refers to either a too rigid (e.g., no social breaks at work) or too loose adherence to clock-time structures (e.g., no deadlines). In contrast, environments that foster high temporal shifting allow workers to flexibly switch between using clock-time and alternative time structures (e.g., event time), depending on when it is task-appropriate to do so. Temporal shifting should therefore allow for instrumental time to align with clock-time expectations. Formally:

Proposition 4: Instrumental time will diverge from clock time under conditions of low temporal shifting.

REFERENCES AVAILABLE FROM THE AUTHORS