

**The Influence of Subjective Time on Employee Attitudes and Behaviors in Temporary
Organizations**

By

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This thesis is submitted in fulfillment of the requirements for the degree of

Doctor of Philosophy (PhD)

Certification

I certify that the work in this thesis entitled ‘The Influence of Subjective Time on Employee Attitudes and Behaviors in Temporary Organizations’ has not previously been submitted for a degree nor has it been submitted as part of the requirements for a degree at any other university or institution other than Macquarie University.

I also certify that the thesis is an original piece of research, and it has been written by me.

Any help and assistance that I have received in my research work and the preparation of the thesis itself have been appropriately acknowledged.

In addition, I certify that all information sources and literature used are indicated in the thesis.

The research presented in this thesis was approved by the Macquarie University Human Research Ethics Committee, reference number: 5201800339, approved on June 14, 2018.

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Abstract

Subjective time is an individual's psychological experience of time and refers to how an individual thinks about and uses time. An individual's thinking about time is generally measured by 'temporal focus', their attention towards past, present, and future. Time use is generally measured by 'polychronicity', or an individual's preferences around performing multiple tasks simultaneously, and by their 'pacing style', or the way people pace their work and activities over time. Individuals differ significantly in their subjective perception of time. Many studies have been conducted to understand the influence of temporal focus, polychronicity, and pacing style on organizational behaviors, but researchers have rarely studied the influence of these temporal differences on behaviors in temporary organizations.

Temporary organizations are time-bound organizations having a limited operating time and an institutionalized termination date, such as those found in software development or construction projects. Studying the influence of subjective time on employee behaviors in temporary organizations is important, given the increasing use of projects. This thesis incorporates both facets of subjective time—that is, both thinking about time and using time—and the four studies presented here examine the influence of temporal focus, polychronicity, and pacing style on the attitudes and behaviors of employees in projects.

To ensure relevant literature is reviewed and research gaps identified, a systematic literature review was conducted in Study 1, assessing how time is conceptualized and used in the literature around temporary organizations. The results show that time is at the center of projects and project management, but that researchers have rarely examined the influence of differences in subjective time on employee behaviors in these organizations.

To address the gap in the research regarding ways of thinking about subjective time as identified in Study 1, the influence of temporal focus on employees' performance behaviors was investigated in Study 2 by carrying out 34 semi-structured interviews with project

managers and team members in Australia. The results demonstrate that the temporal foci of past, present, and future individually and collectively influence employee performance behaviors. The three temporal foci are interconnected, and individuals can wander freely between them to collect the information they require to make decisions and perform tasks.

Then to address the gaps in the research identified in Study 1 regarding the use of subjective time, 55 semi-structured interviews were conducted with information technology (IT) project managers and project team members in Pakistan. The influence of polychronicity and pacing styles fit between employees and their supervisors on employees' attitudes and behaviors was investigated. The results demonstrate that individuals associate high temporal fit with positive outcomes while individuals with low temporal fit initiate a process of adjustment, and that supervisors can help in this adjustment process.

To further investigate the findings of Study 3, 309 Pakistani IT professionals were surveyed in Study 4 to examine the effects of individual-organizational polychronicity fit on employee turnover intentions and the mediating roles of exhaustion and work overload between the polychronicity misfit and turnover intentions relationship. The results from polynomial regressions and response surface analysis show polychronicity fit is significantly related to employee turnover intentions, such that employee turnover intentions are high when organizational polychronicity is higher than individual polychronicity. Exhaustion and perceptions of work overload partially mediate the relationship between polychronicity fit and turnover intentions. Overall, the results of this thesis suggest that managing subjective time differences between employees and organizations in temporary organizations can ensure positive individual and organizational outcomes. These findings extend our theoretical understanding of subjective time phenomena in organizations.

Publications

This thesis consists of four distinct studies, each being discussed in a separate chapter. All four studies have been prepared to be submitted to peer-reviewed conferences and journals, as detailed below. An earlier version of the study in Chapter 4 has been presented at the 2019 Australian and New Zealand Academy of Management Conference.

Conference paper related to the study in Chapter 4:

Shah, S. W., Jepsen, D. M., & Bankins, S. (2019). *Influence of time pacing styles congruence on individuals' performance, wellbeing, and turnover intentions*. Paper presented at the 33rd Annual Australian & New Zealand Academy of Management (ANZAM) Conference, Cairns, Queensland, Australia.

Articles prepared for publication:

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Shah, S. W., Jepsen, D. M., & Bankins, S. Past, present, and future: Unpacking the phenomena of temporal focus in organizations. Target: *Human Relations* (ABDC 2019: A*; Impact Factor: 3.04). This paper is under review in Academy of Management AOM 2021 conference.

Shah, S. W., Jepsen, D. M., & Bankins, S. From misfit to fit: How individuals adjust to polychronicity and pacing styles misfit. Target: *Human Performance* (ABDC 2019: A; Impact Factor: 1.302).

Shah, S. W., Jepsen, D. M., & Bankins, S. Polychronicity fit and turnover intentions in projects: The mediating role of exhaustion and work overload. Target: *International Journal of Project Management* (ABDC 2019: A; Impact Factor: 6.6). This paper is under review in Academy of Management AOM 2021 conference.

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Chapter 1. Introduction

Time influences human life, experience, and work (McGrath & Kelly, 1986). Time constitutes a fundamental dimension in organizational dynamics and influences employees' execution of work at individual, team, and organizational levels (de Vasconcellos, 2017; Shipp & Cole, 2015). In organizational sciences, time is understood from the two perspectives of objective and subjective time (Bluedorn & Denhardt, 1988). Objective time flows forward and is measured by the 'ticking of a clock' (Bluedorn & Denhardt, 1988; Shipp & Cole, 2015), whereas subjective time is understood through the psychological experience of an individual and is socially constructed (Clark, 1985; Schutz, 1967; Sorokin & Merton, 1937). In an objective sense, time is considered an external influence that shapes human attitudes and behaviors. In a subjective sense, time acts as an internal influence because individuals perceive and experience it differently in a way that shapes human attitudes and behaviors (McGrath & Kelly, 1986). Time has gained the attention of both scholars and practitioners, because understanding the role of time from both objective and subjective perspectives is important for understanding how employees operate at work, and how to effectively manage them (Levasseur et al., 2020; Shipp & Cole, 2015).

Despite the centrality of time for shaping employee behavior and approaches to management, time remains routinely neglected in organizational psychology and management research (Ancona, Okhuysen, & Perlow, 2001; Delisle, 2019; Sonnentag, Pundt, & Albrecht, 2014). This is despite terminology like 'time famine', parallel- and multitasking, and 'time is money' being commonly used in organizations. Greater scholarly attention toward the influence of time on organizational behaviors and the attitudes of employees is now a critical step in moving this area forward, offering important theoretical and empirical insights (Shipp & Cole, 2015). The area of objective time has been widely studied and its influence on organizational phenomena is well known in comparison to that of subjective time (Shipp & Jansen, 2020). It is important to investigate manifestations of subjective time,

including the time perspective of individuals, to understand how individuals behave and perform in organizations (Levasseur et al., 2020; Shipp & Jansen, 2020).

This thesis responds to the calls for more research on subjective time (de Vasconcellos, 2017; Levasseur et al., 2020; Shipp & Jansen, 2020) by examining the influence of an individual's time perspective on his or her behaviors in temporary project organizations. An individual's time perspective represents the subjective preferences of that individual in how they think about and use time (Ancona et al., 2001), and temporary organizations are those organizations, such as those found in software development projects, that have a specified time during which they operate and complete their work, with a predefined termination date (Bakker, 2010).

Adopting a thesis by publication approach, the primary research question of this thesis is: How do employees' subjective time differences influence their organizational attitudes and behaviors in temporary organizations? Each of the four studies discussed here then responds to specific sub-research questions to inform this broader aim.

The thesis consists of six chapters. This introductory chapter provides a preview of the key theoretical and empirical frameworks informing the thesis. Study 1 (Chapter 2) presents a systematic review of the literature on temporary organizations to examine how time in both its objective and subjective conceptions is theorized and empirically studied in this context, setting the ground for the following three studies by providing workable research gaps and questions. Study 2 (Chapter 3) empirically examines how an employee's thinking about time, their temporal focus, influences their performance behaviors in temporary organizations. Chapter 4 (Study 3) examines how an employee's organizational fit on preferences of time use (polychronicity) and approach to deadlines (pacing styles) influences their organizational behaviors. Chapter 5 (Study 4) extends Study 3 and examines how a

polychronicity fit between an employee and their organization can influence their intention to quit the organization. Chapter 6 provides the overall discussion and conclusion of the thesis.

In the following section, the notion of time in organizations is reviewed, as are each of the subjective time constructs—temporal focus, pacing styles, and polychronicity—to outline the major gaps and articulate the relevant research questions. After discussing the literature on each of the subjective time constructs, the context of this research is explored, and the relevant theoretical frameworks for the studies of the thesis are reviewed in detail.

Time in organizations

Time underpins human experiences, making it nearly impossible to think about life without referring to its passage (de Vasconcellos, 2017). Time influences human behaviors in such a way that it becomes paradoxically imperceptible, and separating individuals from their surrounding temporal context becomes impossible (Lewin, 1943). Individuals experience time in two ways, objectively and subjectively (Bluedorn & Denhardt, 1988). Objective time is an external process that regulates our lives through, for example, clock-based measures of time and processes for organizing time, such as scheduling, cycles and rhythms, and duration (McGrath & Kelly, 1986). In subjective terms, time exists as a subjective or psychological experience and can be different for every individual. According to the subjective view of time, time can be constructed socially and is flexible (Schutz, 1967). Subjective time can be discussed at an individual level or as differences between individuals and groups in terms of how they think about and perceive time, accessible psychologically in terms of retrospection and anticipation (Lewin, 1943), and its rate or magnitude of passage depends on the context (Csikszentmihalyi, 1991).

Objective time is free from psychological aspects because the clock keeps ticking, irrespective of emotions, feelings, and anticipations. In contrast, subjective time is unique because it may take a richer and highly personalized perspective, which is beyond the scope

of objective time and may or may not align with objective time. For example, an individual may or may not anticipate what will happen in the future correctly, but will generally anticipate the future in a way that benefits them (Wilson & Ross, 2001). In organizational research, the influence of objective time—for instance, the study of organizational phenomena over time (Collins et al., 2016; Methot et al., 2017; Rico et al., 2020) or the effect of working hours on employee and organizational outcomes (Bradley et al., 2012; Townsend et al., 2011)—has received more scholarly attention than subjective time (Levasseur et al., 2020; Mohammed & Marhefka, 2020).

Subjective time constructs can be broadly grouped into two categories: first, how people think about time, which is commonly measured through the construct of temporal focus; and second, how people use time at work, which is measured through the constructs of polychronicity and pacing style (Shipp & Cole, 2015). In this thesis, the influence of temporal focus, polychronicity, and pacing style on individuals' organizational behaviors and attitudes are studied.

Temporal focus

Temporal focus is the “allocation of attention to the past, present, and future” (Shipp, Edwards, & Lambert, 2009, p. 2). Temporal focus is rooted in the early theorization of Lewin (1951, p. 75), being the “totality of the individual's views of his [sic] psychological future and his [sic] psychological past existing at a given time.” Individuals freely allocate their attention to different temporal states and can assign attention to the temporal categories of past, present, and future simultaneously (Shipp et al., 2009). This implies that if an individual is ‘high’ on both past and present focus, that individual can still think about the future and anticipate upcoming events and states (a future focus). The temporal focus of managers and employees has been examined in research, including how CEOs' temporal focus predicts the

rate of new product introduction (Nadkarni & Chen, 2014) and corporate entrepreneurship (Chen & Nadkarni, 2017).

The three foci of past, present, and future influence an individual's organizational behaviors in different ways (Shipp et al., 2009). However, research has focused more on the influence of a future focus, by associating a high future focus with positive work outcomes which ultimately benefit organizational operations (Shipp & Aeon, 2019). This focus has, however, neglected to examine the influence of past and present foci, leaving important unanswered questions regarding how past and present foci also influence employee performance behaviors, given that there is existing evidence that they have an effect (Shipp & Aeon, 2019). Accordingly, there have been calls to study the influence of all three temporal foci on employees' behaviors and attitudes (Levasseur et al., 2020; Mohammed & Marhefka, 2020; Shipp & Aeon, 2019; Waller, Franklin, & Parcher, 2020). In response, Study 2 of this thesis addresses two research questions: How individuals perceive their subjective attention towards past and present and relate it to their performance in organizations? And how is an individual's attention to past, present, and future interlinked, and how do these inform each other? Performance behaviors are the most important aspect of organizational operations and include in-role and extra-role behaviors: in-role behaviors are stated in the job description, and employees are evaluated against them and are paid for these behaviors; extra-role behaviors are voluntary and helping behaviors which are not written in the job description of employees, not formally evaluated, and are not compensated in monetary terms (Williams & Anderson, 1991).

Pacing styles

An individual's pacing style refers to their preference for temporally distributing their efforts towards the deadline for a given task (Gevers, Mohammed, & Baytalskaya, 2015; Gevers, Rutte, & Van Eerde, 2006). Three linear pacing styles exist: early action; steady

action ; and deadline action (Gevers et al., 2006). In an early action style, individuals exert their efforts once a task is assigned and strive to complete the task before the deadline. In the steady action style, individuals devote their efforts uniformly, from the beginning of the task through to the assigned deadline. In the deadline action style, individuals devote their efforts to tasks only when the deadline approaches. Along with these three linear pacing styles, there are two non-linear action styles: the U-shaped style refers to individuals devoting more of their efforts both at the beginning of a task and near the deadline; conversely, the inverted-U-shaped action style refers to individuals devoting all of their efforts during the ‘middle’ of the task (i.e., between task commencement and the assigned deadline).

Among these pacing styles, steady action, deadline action, and U-shaped action styles are the most frequently used by individuals (Gevers et al., 2009). Pacing styles are stable and operate more like traits than states (de Vasconcellos, 2017). Although research on pacing styles in organizations is burgeoning, the relationships between pacing styles and work outcomes like performance, job satisfaction, and wellbeing are not well understood (de Vasconcellos, 2017). Therefore, Study 3 in this thesis addresses two questions: How is perceived pacing styles fit related to individuals’ work outcomes? And how do individuals react to low pacing styles fit?

Polychronicity

Individuals vary in terms of their preferences for focusing on one task at a time, as opposed to working on many tasks at once. Individuals preferring to focus on multiple tasks at a time are known as polychrons, while individuals preferring to focus on one task at a time are known as monochrons (Persing, 1999). Polychronicity is conceptualized on a continuum with monochronicity—an individual’s preference for focusing on one task at a time and the belief that his or her preference is the best way of performing tasks—on one end of the

continuum and polychronicity on the other (Bluedorn, 2002; Bluedorn & Denhardt, 1988; Bluedorn, Kaufman, & Lane, 1992).

Several empirical studies have examined the relationship between polychronicity and individual characteristics and outcomes (Hecht & Allen, 2003; Hecht & Allen, 2005; Slocombe & Bluedorn, 1999). For instance, among the personality dimensions, agreeableness, neuroticism, and openness to experience are unrelated to polychronicity, while conscientiousness is negatively related and extraversion is positively related to polychronicity (Conte & Gintoft, 2005; König, Buhner, & Murling, 2005). Polychronicity is also related to being flexible around changes in plans and a high information-retention capacity (Hall, 1983), and has been related to job satisfaction (Jang & George, 2012) and perceptions of frustration and confusion in the workplace (Cotte & Ratneshwar, 1999). Results regarding the influence of polychronicity on individuals' performance behaviors are mixed (Conte & Gintoft, 2005; Conte & Jacobs, 2003) and require further scholarly attention. It is argued that these relationships might be influenced by the nature of work, such that the relationship will be positive when the work environment requires polychronic behaviors (König & Waller, 2010). To study the influence of polychronicity on employee performance, Study 3 of this thesis addresses the following questions: How is perceived polychronicity fit related to individuals' work outcomes? And how do individuals react to low temporal fit?

To understand the role of these subjective time constructs on employee behaviors, we draw on several theoretical frameworks. In the following section we discuss how each study is informed and guided by the established theories.

Theoretical frameworks

As well as a systematic literature review, the thesis contains three empirical studies, each guided by established theoretical frameworks. Study 2, which examines the influence of temporal focus, is guided by time perspective theory (Zimbardo & Boyd, 1999) and mental

time travel theory (Suddendorf & Corballis, 1997). Study 3, which examines the influences of pacing styles and polychronicity, is guided by the theory of time congruence (Kaufman, Lane, & Lindquist, 1991) and the theory of work adjustment (Dawis, Lofquist, & Weiss, 1968). Study 4, which examines the influence of polychronicity fit and employee turnover intentions, is guided by person-environment fit theory (Kristof-Brown, Zimmerman, & Johnson, 2005). Each theory is briefly discussed in what follows—Table 1 summarizes the theories and connects them to the separate studies.

Table 1. Theoretical frameworks and their key tenets used in each study

| Study | Theories | Key tenets |
|--|----------------------------------|--|
| Study 2. Temporal focus and individual performance | 1. Time perspective theory | <p>Time perspective theory:</p> <ul style="list-style-type: none"> • Subjective time influences individuals' attitudes, emotions, and behaviors • Individuals differ based on their time perspectives • Temporal foci of past, present, and future influence individuals' behaviors in different directions |
| | 2. Mental time travel theory | <p>Mental time travel theory:</p> <ul style="list-style-type: none"> • Humans have the unique capability of traveling to past and future states • Memory helps individuals re-live their past • Anticipation helps individuals to experience their futures in advance |
| Study 3. Temporal fit of polychronicity and pacing style, and temporal adjustment | 1. Theory of time congruence | <p>Theory of time congruence:</p> <ul style="list-style-type: none"> • Both individuals and organizations have temporal personalities • Individuals perform better, and are more satisfied, when their individual and organizational temporal personalities are congruent |
| | 2. Theory of work adjustment | <p>Theory of work adjustment:</p> <ul style="list-style-type: none"> • Work is conceptualized as an interaction between an individual and a work environment • Tenure is the result of optimal interaction between an individual and a work environment • Work adjustment is the process of achieving and maintaining optimal correspondence between individuals' skills and values and organizational requirements |
| Study 4. Polychronicity fit and turnover intentions | 1. Person-environment fit theory | <p>Person-environment fit:</p> <ul style="list-style-type: none"> • Individuals' behaviors and attitudes are determined jointly by personal and environmental conditions • When individual and environment match, positive consequences, including improved work attitudes and performance, and reduced stress and withdrawal behaviors, are experienced |

Time perspective theory

Time perspective theory (Zimbardo & Boyd, 1999) is the first guiding framework for Study 2. According to time perspective theory (Zimbardo & Boyd, 1999), an individual's behaviors, emotions, and perceptions are shaped by the subjective nature of time. Time perspective theory posits that the 'ticking of the clock' is not the only influencer of human behavior, but rather how individuals think about time and how they assess time also influences individual behaviors and attitudes. Time perspective theory categorizes individuals into distinct chronological categories of past, present, and future. An individual's thinking about these chronological categories influences their approach towards work and serves as the basis for stable individual differences (Zimbardo & Boyd, 1999).

Mental time travel theory

Mental time travel theory (MTTT; Tulving, 1972) is the second guiding framework for Study 2. MTTT posits that human beings can mentally travel in time either to their past or to their future (Suddendorf & Corballis, 1997; Tulving, 1983). Mental time travel to the past involves individuals re-living their experiences. In mental time travel to the future, individuals simulate the future and live their anticipated experiences. MTTT asserts that only humans have this unique ability to detach themselves from their current environment and experience either their past or future (Suddendorf & Corballis, 1997).

Mental time travel to the past and future is predominantly dependent on memory and simulation of future events by an individual, respectively. Mental time travel to the past is dependent upon two distinctive categories of memory, episodic memory and semantic memory (Suddendorf & Corballis, 1997; Tulving, 1972). Episodic memory refers to the capacity for recollecting autobiographical events that occurred in a particular spatial and temporal context (Tulving, 1972). Semantic memory refers to the capacity for recollecting general knowledge and facts about the world (Tulving, 1972). Similarly, mental time travel to

the future is dependent on two distinct categories of simulation or anticipation, episodic and semantic simulation. Episodic simulation is the construction of a detailed mental representation of a specific autobiographical future event (Schacter, Addis, & Buckner, 2008). Semantic simulation is the construction of a detailed mental representation of a general or abstract state of the world. Mental time travel theory considers episodic memory and episodic simulation as forms of self-projection, which allow the individual to experience mental states that are removed from the immediate environment (Buckner & Carroll, 2007). The theory also links episodic memory to episodic simulation such that episodic memory provides inputs to episodic simulation and facilitates the time travel.

Theory of time congruence

The theory of time congruence (Kaufman et al., 1991) is one of the two guiding frameworks for Study 3. The theory of time congruence asserts that individuals experience positive attitudes and work outcomes when their temporal personalities match the temporal profiles of their organizations (Kaufman et al., 1991). It posits that individuals have temporal personalities based on their preferences about how they think about and how they use time; such preferences include, for instance, polychronicity, which is an individual's preference for doing multiple things simultaneously (Bluedorn & Denhardt, 1988), and temporal orientation, which is an individual's cognitive involvement predominantly in the past, present, or future (Holman & Silver, 1998). Organizations also have temporal personalities in terms of their requirements around the same temporal concepts. When there is a congruence between an individual's time preferences and the time-use requirements of the organization, "a fit is thought to exist, potentially leading to satisfactory performance, and enhancement of quality of work and general life" (Kaufman et al., 1991, p. 79). Also, when there is a congruence between an individual's temporal preferences and the organization's temporal requirements, individuals tend to stay in the organization longer (Kaufman et al., 1991).

Theory of work adjustment

The theory of work adjustment (TWA; Dawis et al., 1968) is the first guiding framework for Study 3. It postulates that experiences of work involve an interaction between an individual and a work environment, where the work environment requires certain tasks to be performed and the individual brings skills to perform those tasks (Dawis & Lofquist, 1984). Individuals and their work environment must continue to meet each other's requirements to maintain the interaction (Dawis et al., 1968). Work adjustment is required when there is a discrepancy between individual and work environment characteristics, and is the process of achieving and maintaining optimal correspondence between these characteristics. Optimal correspondence generates individual satisfaction with the work environment, which further supports employee retention, the principal indicator of work adjustment (Dawis et al., 1968).

Person-environment fit theory

Person-environment fit theory (Kristof-Brown et al., 2005) is the second guiding framework for Study 4. Person-environment fit refers to the degree of match between individuals and some aspect of their work environment (Kristof-Brown et al., 2005). The concept of person-environment fit is firmly based on the notion that behavior is a function of both person and environment (Lewin, 1943); that is, person-environment fit theory posits that individuals' behaviors and attitudes are determined jointly by personal and environmental conditions. At the individual level, characteristics may include interests, preferences, personality traits, values, goals, knowledge, skills, and abilities. At the environment level, characteristics may include vocational norms, job demands, job characteristics, organizational cultures, and climates. The basic premise of person-environment fit research is that for each individual there is a particular environment that is most compatible with that individual's characteristics. If a person works in such a compatible environment, it results in positive

consequences including improved work attitudes and performance, as well as reduced stress and withdrawal behaviors (Kristof-Brown et al., 2005).

Having discussed the main constructs of an individual's time perspective and the key theoretical frameworks, the literature on temporary organizations and projects is now reviewed to justify the research context for this thesis.

Temporary organizations and project management

The increased time-bound and project-based nature of work has led to an increase in the use of temporary organizations (Bakker, 2010), which are generally defined as “a set of organizational actors working together on a complex task over a limited period” (Bakker, 2010, p. 468). This definition subsumes different organizational entities under its scope, such as construction projects (Harry et al., 2004), theater productions (Goodman & Goodman, 1972), sports event organizing committees (Løwendahl, 1995), emergency response teams (Weick, 1993), research and development projects, software development (Burke & Morley, 2016), task forces (Saunders & Ahuja, 2006), and film sets (DeFillippi & Arthur, 1998). Temporary organizations are regarded as the “organizational equivalent of a one-night stand” (Meyerson, Weick, & Kramer, 1991, p. 167) and a “hyper-efficient organizational form freed from any organizational slack” (Grabher, 2004, p. 1491).

Temporary organizations are different from permanent organizations as the latter are expected to operate eternally while the former have a predefined, institutionalized termination date (Lundin & Söderholm, 1995). There are four major elements which further differentiate temporary organizations from permanent organizations: time, task, team, and transition. Temporary organizations are different from permanent organizations because they are defined by unique and generally non repetitive tasks rather than goals, limited time and deadlines rather than long term survival, temporary teams rather than working organization, and transition rather than production processes and continual development (insert Lundin and

Soderhol 1995). These four unique characteristics of temporary organizations put pressure on employees in terms of how they plan a task, utilize time, and approach a deadline.

Researchers have concluded that because temporary organizations have different work settings, managing temporary organizations requires different managerial strategies in order to be successful (Turner & Müller, 2003). Because temporary organizations place specific requirements on employees regarding how they think about time, how they approach deadlines, and how they use their time while working, such a research context is relevant for this thesis.

After discussing the key constructs, guiding theoretical frameworks, and research context, the philosophical positioning and guiding assumptions of this thesis are now discussed.

Guiding assumptions and philosophical positioning

The research questions and the research context inform the choice of guiding assumptions (Creswell & Clark, 2018; Kuhn, 2012). Discussions about guiding assumptions in social and behavioral research are heavily influenced by philosophical discourse—such as discussions of ontology, which is the nature of the world and reality, and epistemology, which is the nature of knowledge—and have traditionally been associated with the concept of a research paradigm (Given, 2008; Kuhn, 2012). A research paradigm is a commonly shared system of assumptions and expectations for helping researchers to decide the type of knowledge they seek and what constitutes good research for generating that knowledge (Kuhn, 2012). The research paradigm is a framework from which to understand the human experience and a way of viewing the world. The role of a paradigm is to provide a coherent set of assumptions that can be used to guide focus, methodology, data type, and data source choices (Kuhn, 2012). In social and behavioral research, there are potentially many different paradigms, although positivism and interpretivism are the most discussed, applied, and

debated (Crotty, 1998). Paradigms like critical realism offer alternatives to both positivism and interpretivism (Johannesson & Perjons, 2014).

Positivism

The positivist paradigm is grounded in the scientific method of investigation. Experimentation, observation, and reason based on experience are viewed as the basis for understanding human behavior, and therefore (within this paradigm) are viewed as the only legitimate means of extending knowledge and human understanding (Comte, 1865). Positivism interprets observations in terms of realities or quantifiable entities. Ontologically, reality is assumed in positivism to exist independently of human actions and experiences. Positivism contends that the goal of social science should be to identify regularities among phenomena in the world and explain these regularities through cause and effect relationships (Johannesson & Perjons, 2014).

Epistemologically, positivism claims that observation and experimentation are the only avenues or mechanism for obtaining objective knowledge about the social world. Thus, a researcher should assume the role of a disinterested observer who is separate from the subjects being investigated and social inquiry should be objective in nature (Johannesson & Perjons, 2014).

Methodologically, researchers following positivism employ an objective and value-free investigation, in which they distance themselves from the subject of study. Positivist researchers prefer large quantitative studies which may include interviews and questionnaires for collecting research evidence. Along with questionnaires and interviews, positivist researchers highly value experiments because experiments can provide objective knowledge.

Research framed in a positivist perspective relies on deductive logic to derive conclusions through the formulation of hypotheses and testing those hypotheses, using mathematical equations and calculations. Positivism aims to provide explanations and to

make predictions based on measurable outcomes. Positivism may seem natural and logical, however, according to interpretivists, this is exactly the problem with the positivist paradigm (Johannesson & Perjons, 2014). While positivism may be appropriate for the natural sciences, interpretivists argue that it fails to capture essential aspects of the social world, in particular the subjective construction of social phenomena.

Interpretivism

The interpretivist paradigm attempts to understand the subjective world of human experience (Guba & Lincoln, 1989). Interpretivism endeavors to understand and interpret what the subject under study is thinking, or the meaning they are making of the context (Kivunja & Kuyini, 2017). It tries to understand the viewpoint of the subject being observed, instead of the observer's viewpoint. It emphasizes understanding the subject and their interpretation of the world around them. Hence, the key tenet of the interpretivist paradigm is that reality is socially constructed (Bogdan & Biklen, 1998). Ontologically, interpretivism argues that the social world is constructed by people who carry out social actions and give meanings to them (Johannesson & Perjons, 2014). In contrast to the natural world, people create social phenomena, and their meaning depends on the actions, intentions, and understanding of the individuals who participate in them. Thus, social reality depends on people with all their whims, prejudices, and other subjectivities and is much more elusive and fluid than physical reality (Johannesson & Perjons, 2014).

Epistemologically, interpretivism claims that only superficial knowledge can be obtained by studying people as objects because social phenomena exist at deeper levels. Social phenomena are grounded in the actions, experiences, and subjective meanings of people. A researcher should view people as subjects who actively create the social world because a deep understanding of a social phenomenon can be achieved by actively participating in that phenomenon together with the people who create it (Guba & Lincoln,

1989). Researchers should try to act as members of the culture or group being studied by participating in their daily practices and not detach themselves.

Methodologically, interpretivist researchers prefer to use case studies, action research, and ethnography, because these research strategies allow researchers to gain an empathetic or participatory understanding of social phenomena (Johannesson & Perjons, 2014). However, interpretivism is criticized for producing subjective research results, because the results are highly dependent upon the skills and experiences of the individual researcher (Kivunja & Kuyini, 2017). There is a risk that two researchers with different backgrounds and interests may arrive at very different results (Denzin & Lincoln, 2011). To compensate for the shortcomings of both positivism and interpretivism, critical realism has gained popularity among researchers.

Critical realism

Critical realism originated as a scientific alternative to both positivism and interpretivism (Denzin & Lincoln, 2011), which draws elements from both methodological strains in its account of ontology and epistemology (Fletcher, 2017). Critical realism functions as a general methodological framework for research but is not associated with any particular set of methods (Brown, Fleetwood, & Roberts, 2002; Nielsen, 2002). One of the most important tenets of critical realism is that ontology is not reducible to epistemology (Bhaskar, 2014; Fletcher, 2017). In this respect, critical realism deviates from both positivism and interpretivism and critiques positivism for promoting the epistemic fallacy, which is the problematic reduction of ontology to epistemology, or for limiting reality to what can be empirically known (Bhaskar, 1998). The same critique applies to interpretivism, which views reality as entirely constructed through and within human knowledge or discourse. Despite the apparent opposition between interpretivism and positivism, each reduces reality to human knowledge, whether that knowledge acts as a lens or container for reality (Bhaskar, 2013).

Critical realism engages in explanation and causal analysis rather than engaging in thick empirical description of a given context, which makes critical realism useful for analyzing social problems and suggesting solutions for social change (Bhaskar, 2013; Fletcher, 2017; Johannesson & Perjons, 2014).

Ontologically, critical realism stratifies reality into three levels: empirical; actual; and real (Bhaskar, 1998; Johannesson & Perjons, 2014). The empirical level is the realm of events as we experience them, and here events or objects can be measured empirically. At this level, events and objects are often explained through common sense and these events are always mediated through the filter of human experience and interpretation (Bhaskar, 2013). At the actual level, there is no filter of human experience and events occur whether or not we experience or interpret them. The true occurrences are often different from what is observed at the empirical level (Danermark, 2002; Danermark, Ekström, & Karlsson, 2019). At the real level, causal structures or causal mechanisms exist and are the inherent properties in an object or structure that act as causal forces to produce events (Bhaskar, 2013). It is the primary goal of critical realism to explain social events through reference to these causal mechanisms and the effects they can have throughout the three-layered reality (Bhaskar, 2013; Danermark et al., 2019).

Critical realism typically begins with a particular problem or question, which has been guided by theory (Bhaskar, 2013; Fletcher, 2017). Critical realists acknowledge the distinct but complementary importance of philosophy and empirical social science, with the former setting the parameters of possibility for the latter, which examines the substantive operation of structures (Bhaskar, 1979). Therefore critical realists condone the use of existing theory as a starting point for empirical research, because “once a hypothesis about a generative structure has been produced in social science it can be tested quite empirically, although not necessarily quantitatively” (Bhaskar, 1979, p. 62). The initial theory facilitates a deeper

analysis that can support, elaborate, or deny that theory to help build a new and more accurate explanation of reality (Bhaskar, 1979; Bhaskar, 2013).

This thesis is guided by critical realism and aims to refine the current theoretical understanding of, and potentially provide new explanations for, existing phenomena. In all three empirical studies in this thesis, the research questions are guided by one or multiple initial theories which facilitate a deeper analysis of the collected data. The deeper analysis then supports, elaborates, or denies that initial theory to help refine the current understanding of reality or build new explanation of theory (Bhaskar, 2013). In the first empirical study, which is presented as Study 2 in this thesis, time perspective theory (Zimbardo & Boyd, 1999) and mental time travel theory (Suddendorf & Corballis, 1997) are used as initial theoretical frameworks to inform the research question and guide the interview protocol and data analysis. In the second empirical study, which is presented as Study 3, the theory of time congruence (Kaufman et al., 1991) and the theory of work adjustment (Dawis et al., 1968) are used as initial theoretical frameworks to inform the research question and guide the interview protocol and data analysis. In the third empirical study, which is presented as Study 4, person-environment fit theory (Kristof-Brown et al., 2005) is used as an initial theoretical framework to develop hypotheses and then collect and analyze the data.

Research methodology

The research questions, guiding assumptions, and philosophical positioning of the research inform the choice of the most suitable and feasible research design and data collection methods. This thesis employed a mixed-methods research design through a combination of qualitative and quantitative approaches to collect and analyze data (Tashakkori & Creswell, 2007). Mixed-methods research involves researchers collecting and analyzing data, integrating the findings, and drawing inferences using both qualitative and quantitative approaches in a single study or a program of inquiry (Tashakkori & Creswell,

2007). In mixed-methods research, a researcher combines elements of qualitative and quantitative research approaches for breadth and depth of understanding and corroboration (Johnson, Onwuegbuzie, & Turner, 2007). Mixed-methods research opens “multiple ways of seeing and hearing, multiple ways of making sense of the social world, and multiple standpoints on what is important and to be valued and cherished” (Greene, 2007, p. 20). Mixed-methods research offers many benefits by not separating quantitative and qualitative research into distinct categories but, instead, acknowledging and understanding their interrelated nature and processes (Whitehead & Day, 2007).

Mixed-methods research provides a way to harness strengths that offset the weaknesses of both quantitative and qualitative research (Jick, 1979). Mixed-methods research is practical in the sense that the researcher is free to use all methods possible to address a research problem (Creswell & Clark, 2018). Mixed-methods research is practical because individuals tend to solve problems using both numbers and words by combining inductive and deductive logic through abductive thinking (Morgan, 2007) and by employing skills in observing people as well as by recording behavior (Creswell & Clark, 2018).

To answer the research questions in this thesis both qualitative and quantitative data were collected. Study 1 is a systematic literature review, and the data were collected in the form of published research articles from three leading project management journals. Study 2 is a qualitative research study, with data collected in the form of semi-structured interviews from 34 project professionals in Australia. Study 3 is a qualitative research study, the data coming in the form of semi-structured interviews from 55 project professionals in Pakistan. Finally, Study 4 is a quantitative research study, and the data were collected through surveys from 309 project professionals in Pakistan.

Overview of the research in this thesis

This thesis explores the influence of individuals' subjective time perceptions on their behaviors and attitudes in temporary organizations. The broader research question examined in this thesis is: how do employees' subjective time differences influence their organizational attitudes and behaviors in temporary organizations? The following four chapters present studies that examine the perspectives at organizational and individual employee levels, and examine separate research (sub)questions, as outlined in Table 2.

Table 2. Overview of research

| Chapter/Study | Research question/s | Guiding theories | Type of data used |
|---|--|--|--|
| Chapter 2. Study 1. Systematic literature review | How time is conceived and researched in project management literature? | | 101 papers in three leading project management journals (IJPM, PMJ, and IJMPB) |
| Chapter 3. Study 2. Temporal focus and individual performance | Individuals perception of their subjective attention towards past and present and its relationship with their performance in organizations. Link between an individual's attention to past, present, and future and flow of information between these categories. | Time perspective theory Mental time travel theory | 34 semi-structured interviews in Australia |
| Chapter 4. Study 3. Temporal fit of polychronicity and pacing styles and temporal adjustment | Relationship between perceived temporal fit and individuals' work outcomes. Individual's response to low temporal fit. | Theory of time congruence Theory of work adjustment | 55 semi-structured interviews in Pakistan |
| Chapter 5. Study 4. Polychronicity fit and turnover intentions | Influence of individual-organizational polychronicity fit on individuals' turnover intentions. | Person-environment fit theory | 309 employee surveys in Pakistan |

As is standard practice for a thesis by publication, each chapter is a paper prepared for publication. Study 1 reported in Chapter 2 aims to better understand the conceptualization and influence of time in temporary organizations. Study 2 in Chapter 3 examines individual employees' perceptions of temporal focus and the relationship between individual temporal focus and their performance behaviors through a qualitative study involving semi-structured interviews. Study 3 in Chapter 4 examines the perceived influence of pacing style and polychronicity on employee behaviors and discusses the perception of individual-supervisor fit, misfit, and adjustment through a qualitative study involving semi-structured interviews. Study 4 in Chapter 5 examines the influence of individual-organization polychronicity fit on employee turnover intentions through a quantitative study involving surveys. The concluding Chapter 6 summarizes the key findings of this thesis and provides theoretical and practical recommendations. Following Chapter 6, a reference list is presented which includes all work cited throughout the thesis (each chapter also having its own reference list). Appendices give the interview plans for Studies 2 and 3 and the survey items used in Study 4.

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**Chapter 2. Study 1. It's about time: A systematic review of the study of time in
project management**

Introduction to Study 1

This thesis examines the influence of individual subjective time differences by addressing a primary research question: How do employees' subjective time differences influence their organizational attitudes and behaviors in temporary organizations? To address this primary research question, four studies were conducted, each study having specific research questions. The first study of this thesis is a systematic literature review of how time is defined and conceived in project management or temporary organizations literature. This systematic review sets the stage for this thesis by reviewing and evaluating key project management literature and generating temporally-focused research questions to guide future research. Time is at the heart of project management practice, but it is not a centerpiece of project management scholarship, and this limits our understanding of time-related phenomena in projects. To address this important issue a systematic review was undertaken of the literature in three leading project management journals: the *International Journal of Project Management* (IJPM), the *Project Management Journal* (PMJ), and the *International Journal of Managing Projects in Business* (IJMPB). Specifically, this systematic review presents how time is defined and conceptualized in the project management literature, unveils key gaps in the project management literature relating to time, and outlines an agenda for future time-related research in project management contexts.

This paper has been prepared according to the publication guidelines for the *International Journal of Project Management*.

It's about Time: A Systematic Review of the Study of Time in Project Management

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ABSTRACT

Time is one of the most important aspects of project management practice, but our understanding of how it impacts project success and performance remains limited. Every year nearly half of all projects that start then fail to complete on time or miss their initial deadlines. Many project underperformances and failures are associated with time-related issues. Despite its acknowledged importance in project management, time-related phenomena are rarely at the forefront of project management research. We aim to stimulate research on time-related phenomena in projects through a systematic literature review of 101 papers in leading project management journals. The study reveals how time is conceived and conceptualized in projects and the dimensions of time-related phenomena addressed in project management research. The study exposes gaps in the literature and presents an agenda charting how future research can better examine time-related phenomena in project management and their influence on project outcomes.

Keywords

Projects, systematic literature review, temporal, temporality, temporary, temporary organizations, time

It's about time: A systematic review of the study of time in project management

Time is one of the most salient dimensions of effective project management (Bakker et al., 2016; Grabher, 2002). In projects, how time is understood and the effects it exerts on outcomes are different compared to other organizational forms (Bakker, 2010; Grabher, 2004). For example, projects are often termed ‘temporary organizations’, because they are time-bound with a clear termination point (Lundin & Söderholm, 1995). Time is important in projects because, compared with a permanent organization, “for the temporary organization, time is always running out since it is finite from the start” (Lundin & Söderholm, 1995, p. 439). The effective management of time is one of the key success criteria for projects, however on-schedule project delivery remains problematic. Globally, 47 percent of projects fail to complete on time and an average USD 114 million are lost for every USD 1 billion of investment in projects (PMI, 2020). Time-related issues contribute to 38 percent of project underperformances and failures. Although time is at the heart of project management practice, project management researchers have largely neglected the explicit examination of the role of time in generating project outcomes (Bakker et al., 2016; Delisle, 2019).

Time is a complex topic, considered “one of the most challenging and elusive concepts in human thought” (Bluedorn & Standifer, 2006, p. 196). One driver of this complexity is that time in organizations can be conceptualized as either objective or subjective (Bluedorn & Denhardt, 1988). The dichotomy of objective and subjective time represents one of the basic differences regarding the ontology of time. On the one hand, objective time measured by the clock, chronometer, or calendar (Zerubavel, 1985) is unidirectional, homogeneous, and absolute (Bluedorn & Denhardt, 1988; Shipp & Cole, 2015). Objective time emphasizes schedules, deadlines, punctuality, speed, and pace (Bluedorn & Jaussi, 2007; Gevers et al., 2015; Waller et al., 2001). On the other hand, subjective time is perceived and experienced by individuals psychologically (McGrath &

Kelly, 1986). Subjective time is socially constructed, heterogeneous, and interpretive (Ancona et al., 2001; George & Jones, 2000; McGrath & Rotchford, 1983). Due to the psychological and sociological elements of time, subjective time does not necessarily correspond with objective time (McGrath & Rotchford, 1983). For instance, an individual may think an activity takes a long time when they subjectively experience it as boring, while in clock time it may only last 15 minutes. Both objective and subjective time influence human attitudes, behaviors, and emotions (McGrath & Kelly, 1986; Shipp & Fried, 2014; Zimbardo & Boyd, 1999). Therefore, it is important to understand both dimensions in a project management context (Delisle, 2019).

To bring time to the forefront in project management literature, it is important to understand how it is defined and conceived in this literature and construct an agenda for how future scholarship may address time-related phenomena in projects. This study thus addresses the key research question: How is time conceived and researched in project management literature? To address this question, a systematic review and synthesis of current time-related project management literature identifies the key gaps and provides a foundation for a future research agenda. The main contribution of this study is to invigorate the importance of studying time-related phenomena in projects by identifying key gaps in existing literature and providing fertile ground for theoretical advances.

METHODS

Systematic literature reviews are based on an explicit, repeatable, and written method following specific steps (Massaro, Dumay, & Guthrie, 2016). Steps include specifying the research question, devising the search strategy and finalizing the inclusion criteria, searching the literature, and analyzing and drawing inferences and conclusions from the literature

(Massaro et al., 2016; Petticrew & Roberts, 2008). We follow this four-step process in this review, as visualized in Figure 1.

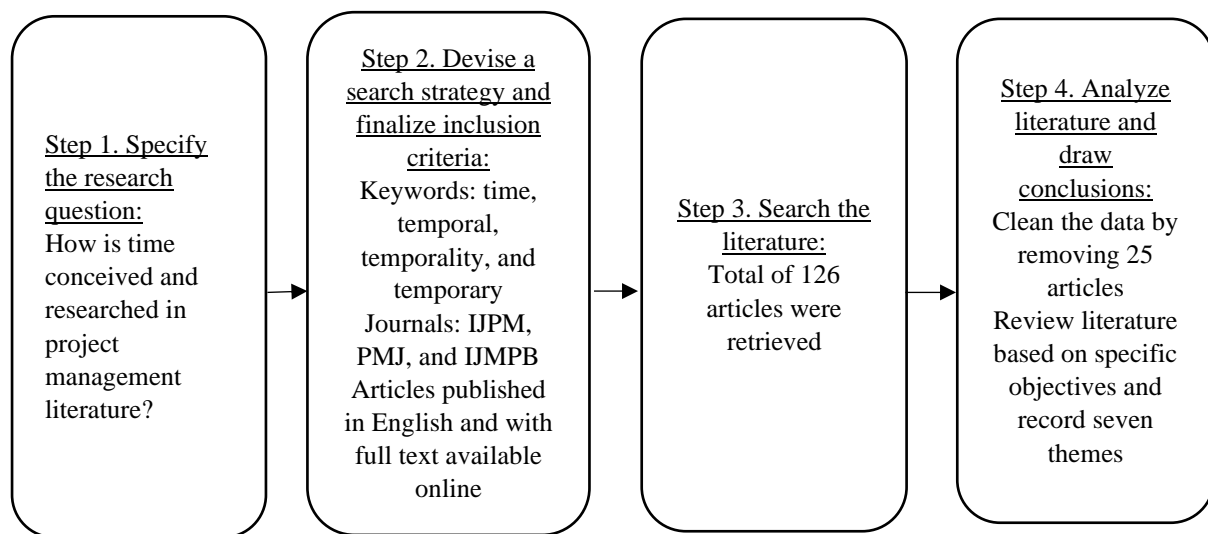


Figure 1. Stepwise flow of the systematic review

Defining the research question (Dixon-Woods, 2010; Massaro et al., 2016) provides the direction, focus, and central assumptions for the review (Dickson, 2014). Our search strategy ensured the selection of relevant work for analysis and synthesis (Dixon-Woods, 2010) through a careful selection of keywords, databases, journals, and publication periods to make sure all relevant materials are captured (Massaro et al., 2016). Our keywords of time, temporal, temporality, and temporary are generally used to address time-related phenomena in both time and project management literatures. Considering the scope and nature of the research question, search queries for relevant primary publications were conducted in the three key project management journals (Ahola et al., 2014; Musawir, Abd-Karim, & Mohd-Danuri, 2020): the *International Journal of Project Management* (IJPM, founded in 1983), the *Project Management Journal* (PMJ, founded in 1970), and the *International Journal of Managing Projects in Business* (IJMPB, founded in 2008). The selected three journals frequently publish project-specific academic research and are open to novel concepts and research approaches. Therefore, we expected that most research on time related issues in

temporary organizations would have been published in these outlets. All issues of the journals up to July 2020 were included in the review.

For our inclusion criteria, we included articles: if they were published in English; if they contained at least one of the search keywords in the title, abstract, or keywords; and if a full-text version was available online. Articles were retrieved from the website of each journal using the websites' search options. This search returned 126 results: 88 from IJPM, 21 from PMJ, and 17 from IJMPB.

Data cleaning removed ten duplicate papers, two editorials, one research note, and a book review. Further articles were excluded where their titles (three papers) and abstracts (eight papers) were not relevant for our focal research question. A total of 25 papers were removed, leaving 101 articles for analysis. All papers were reviewed with methods, key findings, time conceptualization, limitations, and future research directions evaluated. Themes on how time is conceptualized and theorized in project management literature emerged. Themes were established where there were groupings of at least three papers that had similar ideas and issues.

RESULTS

The seven themes generated from the review are time in projects as: a distinguishing feature; a success criterion; a distinct organizational context; a frame of reference for studying project-related phenomena; different temporal rhythms in projects; subjective individual differences between personnel and subjective nuances in work settings. These themes were then categorized at a higher level into the two groupings of objective time and subjective time, based on how time is conceptualized in each article. The first four themes, in which time was conceptualized as clock time or calendar time, were categorized as objective time. The remaining three themes, in which time was conceptualized in a subjective way, were categorized as subjective time.

As seen in Table 1, objective time is studied more frequently than subjective time in project management literature, with 87 of the 101 papers addressing it. In what follows, we present the results of each emergent theme, highlight the major studies illustrating those themes, and identify the research gaps in each theme.

Table 1. Papers in each theme and category

| Theme | Category | Number of papers in | |
|---|------------|---------------------|----------|
| | | Theme | Category |
| (1) Time as a distinguishing feature of projects | Objective | 19 | |
| (2) Time as a success criterion | Objective | 38 | 87 |
| (3) Time as a distinct context of projects | Objective | 27 | |
| (4) Time as a frame of reference for studying project-related phenomena | Objective | 3 | |
| (5) Time as different temporal rhythms in projects | Subjective | 6 | |
| (6) Time as subjective differences between project personnel | Subjective | 5 | 14 |
| (7) Time as subjective nuances in work settings | Subjective | 3 | |

We begin by examining the themes categorized as objective time. In the first theme, *time as a distinguishing feature of projects*, time is conceptualized as the duration of the project and a key feature that differentiates projects from routine and permanent organizational forms (Lundin, 2013; Turner & Müller, 2003). Projects have planned start and finish dates, thus having a predefined and limited duration (Söderlund, 2012; Turner & Müller, 2003). Based on this time-bound nature, projects are often talked about as temporary organizations (Lundin & Söderholm, 1995; Sydow & Braun, 2018). The time-bound nature of projects makes their organizational settings and managerial requirements different to those

of non-time-bound organizations and poses unique challenges for managers and employees (Jacobsson, 2016; Modig, 2007; Turner & Müller, 2003). Papers in this theme suggest that despite the fact that temporary organizations are substantially different to permanent organizations, they are not stand alone silos (Engwall, 2003) but embedded in permanent organizations (Jacobsson, 2013; Pilbeam, 2013; Sydow & Braun, 2018), and can be inter-organizational, embedded in multiple organizations, or may be part of temporary networks initiated to execute multiple projects (Jacobsson, Lundin, & Söderholm, 2015; Lizarralde, de Blois, & Latunova, 2011; Steen et al., 2018).

Ample research has been conducted on the time-bound nature of projects and their relationship with permanent organizations, but there remain gaps in understanding how these organizational forms interact and the differences between them. First, limited time duration is used to differentiate projects from permanent organizations, but permanent organizations also have time constraints and deadlines. It is not clear how the time limitation in temporary organizations is different to time limitations in permanent organizations or how these time limitations influence the working of temporary and permanent organizations. The time-bound nature of projects is a lack of clarity on what length of existence makes an organization “temporary”. Establishing a continuum from temporary to permanent organizations addresses potential time-related issues (Modig, 2007), but further clarification is required, as projects have a variety of possible durations, from a few months (e.g. some software development) to more than a decade (e.g. mega-construction projects).

In the second theme, *time as a success criterion*, time is conceptualized as the duration or deadline of a project and is used to evaluate project success (Atkinson, 1999; Gough-Palmer, 1983; Sanchez & Terlizzi, 2017), with projects that were completed as planned and on time being deemed successful (Gardiner & Stewart, 2000; Hameri & Heikkilä, 2002; Sanchez & Terlizzi, 2017). Although time is not the only success criterion, it

is one of the three most widely used success criteria for projects (Jacobsson, 2013; Youker, 1989). In this domain, time is the centerpiece for researchers in developing models to reduce project duration and accelerate the time to success (Callahan & Moretton, 2001; Økland, 2018; Simms, 1984; Svejvig, Geraldi, & Grex, 2019), estimate the duration of an activity and allow effective scheduling (Chang, Hatcher, & Kim, 2013; Cox, 1995), manage time-cost trade-offs (Chan, 2001; Haga & Marold, 2004; Vanhoucke, Vereecke, & Gemmel, 2005; Wauters & Vanhoucke, 2016), and develop models of project success and project performance (Atkinson, 1999; Gardiner & Stewart, 2000; Sanchez & Terlizzi, 2017).

Time as a success criterion for projects has been researched but there remain gaps which limit our understanding and management of project phenomena. Several models of activity duration estimation and effective scheduling have been developed, all claiming to be effective, which can create confusion for users. The confusion relates to understanding when to use which of these models, because clear distinctions between them, and the context of use for each of these models, are not explicitly stated. It is not clear, for example, whether these models are effective in all project phases or only in specific situations or for specific project types. Similarly, numerous models have been developed for project time-cost trade-offs, but clarity around which to use, in what situations, is lacking.

In the third theme, *time as a distinct context of projects*, time is conceptualized as the duration or deadline of a project. In this domain, time is theorized and applied as a constraint or limitation in the organizational context of projects. Due to time constraints, organizational factors including project personnel behave differently in temporary organizations compared with permanent organizations (Nuhn, 2016). To investigate the influence of contextual time constraints, constructs from permanent organizations, such as turnover (Nuhn, 2016), creativity (Maier & Branzei, 2014), communication management (Yap & Skitmore, 2020), institutional complexity (Matinheikki, Aaltonen, & Walker, 2019), citizenship behaviors

(Braun, Ferreira, & Sydow, 2013) and conflict management (Tabassi, Abdullah, & Bryde, 2019) are tested in projects. It is concluded that time as a contextual constraint influences organizational phenomena differently in temporary organizations.

There remains an important gap in research on time as a distinct organizational context. Time is used as a feature of a project's context, but the effect of the actual project duration or deadline is seldomly used to study the organizational phenomena in projects. Incorporating actual deadlines of projects as a focal construct in empirical studies will help uncover the impact of deadlines on project phenomena and will help in further theorizing about, and empirically examining, the effective management of projects.

In the fourth theme, *time as a frame of reference for studying project-related phenomena*, time is conceptualized as clock time which flows forward, and organizational phenomena are studied over a set period of clock time. The main purpose of these studies is to observe and document the changes in organizational phenomena as time passes. For example, there are studies of the evolution of project processes (de Blois, Lizarralde, & De Coninck, 2016), changes in stakeholders perceptions' of project success (Turner & Zolin, 2012), changes in project managers' information sharing (Jepsen, 2013), and changes in cooperation between project partners (Schweiger, Konlechner, & Güttel, 2020). Despite growing research in this domain, our understanding of changes in different organizational phenomena remains limited.

Turning to the subjective time themes, in the fifth theme, *time as different temporal rhythms in projects*, time-related differences between different projects or between projects (temporary organizations) and their parent organizations are addressed. It is argued that different projects have different rhythms, paces, and temporal norms which distinguish projects from each other (Dille & Söderlund, 2011). In the case of inter-organizational projects where the scope of a project spans institutional boundaries, the coordination of time,

timing, and the tempo of activities can be problematic if there is a misalignment between temporal norms and rhythms across different parties (Dille, 2013; Stjerne, Söderlund, & Minbaeva, 2019). Such a lack of alignment can cause fundamental temporal misfits among the cooperating parties (Dille & Söderlund, 2011). Hence, project managers need to understand temporal differences between projects and/or between projects and their parent organizations to create temporal fit.

Important gaps remain in the literature on time as different temporal rhythms in projects. Researchers in this domain discuss the benefits of achieving temporal fit between projects and between projects and their parent organizations, but the question of how to achieve this fit remains broadly unanswered. A second gap relating to temporal rhythms is our limited understanding of the fit between temporal rhythms of different teams working on a project. A third research gap in this theme relates to studying the temporal differences between individuals, their supervisors, and their team members. Understanding the influence of temporal fit at project, team, and individual levels is important because a high temporal fit is often associated with positive organizational and individual outcomes (Kaufman et al., 1991).

In the sixth theme, *time as subjective individual differences*, temporal orientations, time-related individual differences like time-management skills, perceptions of time pressure, and temporal abilities of project managers and workers are addressed. It is argued that one key skill that successful project managers and workers need to master is the ability to adapt their temporal skills and orientations to the nature of the work they must perform (Thoms & Pinto, 1999). Different aspects of a project manager's duties require appropriate time-related strategies, thus project managers must align their temporal strategies and orientations to the temporal rhythms of the projects they lead to achieve success (Thoms & Pinto, 1999). In papers under this theme, it is contended that individual temporal differences influence project

outcomes differently. For example, individuals' time-saving bias influences project duration (Fink & Pinchovski, 2020), perceived time pressure influences individuals' job satisfaction and goal achievement (Nordqvist, Hovmark, & Zika-Viktorsson, 2004) and team members' creativity (Khedhaouria, Montani, & Thurik, 2017), and differences in time management skills influence project knowledge creation and sharing (Wu, 2013).

Important gaps remain in research on time as subjective individual differences. Basic questions like how individuals working on projects *think* about time and how individuals working on projects *use* their time remain unanswered. Studying individual differences in thinking about and using time can help in extending time-related theories in projects and can improve the effective management of projects.

In the final theme, *time as subjective nuances in work settings*, time is conceptualized as temporalities, the unplanned nuances in work settings or deviations from the project plan. It is argued that temporalities can influence an overall project, so project managers should monitor such temporalities and consider changes in the environment, from planning to executing the project, and adjust accordingly (Simon & Tellier, 2016; Tryggestad, 2013). Project managers are also argued to stay well equipped to identify and cater to such nuances (Brookes et al., 2017; Leybourne, 2010).

In this domain, the main research gap is the lack of understanding about what is to be considered as a 'temporality' or 'nuance'. It is not clear how a project manager can identify and manage these temporalities. It is important to clarify the difference between a change in the project plan and a temporality and to identify the methodologies and tools to help project managers recognize and manage these temporalities.

Table 2 presents details of the author(s), the publication year, the type of study, and the industry or sector for each paper in each theme.

Table 2. Source, article type, and industry sector of reviewed papers

| Themes | Source/citation | Article type | Sector/industry |
|---|-----------------------------------|--|--|
| <u>Objective time</u> | | | |
| 1. Time as a distinguishing feature of projects | (Lundin, 2013) | Conceptual/review paper | Wine |
| | (Pezzillo, 2013) | Mixed methods: Literature review, survey | |
| | (Jacobsson, 2013) | Conceptual/review paper | Researchers in project management |
| | (Jacobsson, 2016) | Mixed methods: Literature review, survey | |
| | (Söderlund, 2012) | Conceptual/review paper | Aviation, construction, sports |
| | (Eduardo, 2014) | Case study: Three cases | |
| | (Pilbeam, 2013) | Case study: Four cases | Water and sanitation |
| | (Dille, Söderlund, & Clegg, 2018) | Case study | Infrastructure development |
| | (de Waard & Kramer, 2008) | Case study: Document analysis | Military, defense |
| | (Modig, 2007) | Case study: Four cases | Military, construction, television production, sailing |
| | (Turner & Müller, 2003) | Conceptual/review paper | Supply chain management and project management |
| | (Sydow & Braun, 2018) | Conceptual/review paper | |
| | (Thomé et al., 2016) | Conceptual/review paper | |
| | (Steen et al., 2018) | Conceptual/review paper | Construction |
| | (Jacobsson et al., 2015) | Conceptual/review paper | |
| | (Lizarralde et al., 2011) | Case study: 27 cases | |
| | (Ekstedt, 2019) | Conceptual/review paper | |
| | (Stjerne et al., 2019) | Conceptual/review paper | |
| | (Delisle, 2019) | Conceptual/review paper | |
| 2. Time as a success criterion | (Økland, 2018) | Mixed-methods case study: Literature review, interviews, document studies, quantitative analysis | Construction |
| | (Chang et al., 2013) | Case study: Four cases | Public sector organization |

Table 2. Source, article type, and industry sector of reviewed papers

| Themes | Source/citation | Article type | Sector/industry |
|--------|---------------------------------------|--|--|
| | (Svejvig et al., 2019) | Case study: Five cases | Multiple sectors |
| | (Chan & Kumaraswamy, 1997) | Quantitative: Survey | Construction |
| | (Leu, Chen, & Yang, 2001) | Conceptual/review paper | Construction |
| | (Wuliang & Chengen, 2009) | Conceptual/review paper | |
| | (Kim, Kang, & Hwang, 2012) | Conceptual/review paper | |
| | (Williams, 2003) | Conceptual/review paper | |
| | (Warburton, 2011) | Conceptual/review paper | Software development |
| | (Sanchez & Terlizzi, 2017) | Quantitative: Hard data from projects | Information systems |
| | (Xu et al., 2012) | Mixed methods: Review, case study | Construction |
| | (Rämö, 2002) | Conceptual/review paper | |
| | (Liberatore & Pollack-Johnson, 2006) | Conceptual/review paper | |
| | (Harhalakis, Davies, & Manzoor, 1987) | Conceptual/review paper | |
| | (Hameri & Heikkilä, 2002) | Case study | Paper, telecommunications, software |
| | (Gough-Palmer, 1983) | Case study | Railway |
| | (Youker, 1989) | Case study | World Bank project |
| | (Sunde & Lichtenberg, 1995) | Conceptual/review paper | |
| | (Cusack, 1985) | Conceptual/review paper | |
| | (Atkinson, 1999) | Conceptual/review paper | Information technology |
| | (Callahan & Moreton, 2001) | Quantitative: Survey | Software development |
| | (Simms, 1984) | Conceptual/review paper | Construction |
| | (Gardiner & Stewart, 2000) | Mixed methods: Literature review, survey, interviews | Utilities, financial, information technology, shipbuilding |
| | (Cox, 1995) | Conceptual/review paper | |
| | (Fiedler, 1987) | Conceptual/review paper | Construction |
| | (Kumaraswamy & Yogeswaran, 2003) | Quantitative: Survey | Construction |

Table 2. Source, article type, and industry sector of reviewed papers

| Themes | Source/citation | Article type | Sector/industry |
|---|--|---|--|
| | (Wright, 1997) | Conceptual/review paper | |
| | (Habison, 1985) | Conceptual/review paper | |
| | (Jaafari, 1996) | Conceptual/review paper | |
| | (Chan, 2001) | Quantitative: Hard data from projects | Education, construction, sports |
| | (Gong & Hugsted, 1993) | Conceptual/review paper | |
| | (Iyer, Chaphalkar, & Joshi, 2008) | Conceptual/review paper | Construction |
| | (Haga & Marold, 2004) | Conceptual/review paper | |
| | (Wauters & Vanhoucke, 2016) | Quantitative: Experiment | University students |
| | (Selinger & West, 2001) | Conceptual/review paper | |
| | (Smith & Flanegin, 2006) | Quantitative: Survey | Chemical |
| | (Turner & Zolin, 2012) | Quantitative: Survey | Defense |
| | (Vanhoucke et al., 2005) | Conceptual/review paper | |
| 3. Time as a distinct context of projects | (Nuhn, 2016) | Conceptual/review paper | |
| | (De Benedittis, 2019) | Mixed methods: Hard data and interviews | High tech |
| | (Hällgren, 2010) | Case study | Mountaineering/sporting |
| | (Kärkkäinen, 2010) | Case study: Experiments | Storage locations |
| | (Yap & Skitmore, 2020) | Qualitative: Interviews | Construction |
| | (Braun et al., 2013) | Quantitative: Survey | Construction, information technology, event management |
| | (Jacobsson & Hällgren, 2016) | Case study | Mountaineering/sporting |
| | (Ding et al., 2017) | Quantitative: Survey | Construction |
| | (Matinheikki et al., 2019) | Case study: Interviews | Construction |
| | (Rosenfeld, Warszawski, & Laufer, 1991) | Quantitative: Experiments | Construction |
| | (Pauget & Wald, 2013) | Case study | Construction |
| | (van Fenema, Rietjens, & van Baalen, 2016) | Case study: Hard data and interviews | Construction |

Table 2. Source, article type, and industry sector of reviewed papers

| Themes | Source/citation | Article type | Sector/industry |
|--|--------------------------------|--|--|
| | (Maier & Branzei, 2014) | Case study: Ethnography | Television sector |
| | (Lindner & Wald, 2011) | Quantitative: Survey | Multiple sectors |
| | (Müller et al., 2018) | Qualitative: Interviews | Multiple sectors |
| | (Nordqvist et al., 2004) | Quantitative: Survey | Construction, product development, organizational development |
| | (Williams et al., 2015) | Mixed methods: Literature review, survey | Building services |
| | (Brown, Adams, & Amjad, 2007) | Quantitative: Survey | Construction |
| | (Tabassi et al., 2019) | Quantitative: Survey | Construction |
| | (Müller et al., 2014) | Quantitative: Survey | Multiple sectors |
| | (Müller et al., 2016) | Quantitative: Survey | Multiple sectors |
| | (Tyssen, Wald, & Spieth, 2013) | Conceptual/review paper | |
| | (Müller et al., 2013) | Case study: Nine cases and 28 interviews | Multiple sectors |
| | (Strang, 2011) | Quantitative: Survey | Market research, telecommunications, insurance, superannuation |
| | (Wan et al., 2020) | Quantitative: Survey | Megaprojects |
| | (Sergeeva, 2019) | Qualitative: Interviews | Infrastructure |
| | (Delisle, 2020) | Qualitative: Interviews | Multiple sectors |
| 4. Time as a frame of reference for studying project-related phenomena | (de Blois et al., 2016) | Longitudinal case study | Multiple sectors |
| | (Jepsen, 2013) | Longitudinal case study | New product development |
| | (Schweiger et al., 2020) | Qualitative: Interviews, phone calls, emails | Information technology |
| <u>Subjective time</u> | | | |
| 5. Time as different temporal rhythms in projects | (Dille, 2013) | Qualitative: Interviews and public documents | Telecommunication |
| | (Dille & Söderlund, 2011) | Conceptual/review paper | |
| | (Dille et al., 2018) | Qualitative: Interviews | Telecommunication |

Table 2. Source, article type, and industry sector of reviewed papers

| Themes | Source/citation | Article type | Sector/industry |
|---|----------------------------|---|---|
| | (Cheng et al., 2016) | Qualitative: Documents, database analysis | Public and private sector |
| | (Alioua & Simon, 2017) | Case study | Technology and services sector |
| | (Simon & Tellier, 2016) | Case study: Interviews | Semiconductor |
| 6. Time as subjective differences between project personnel | (Wu, 2013) | Qualitative: Interviews, observations | Education/university |
| | (Nordqvist et al., 2004) | Quantitative: Survey | Construction, product development, organizational development |
| | (Khedhaouria et al., 2017) | Quantitative: Survey | Education/university |
| | (Thoms & Pinto, 1999) | Conceptual/review paper | |
| | (Fink & Pinchovski, 2020) | Quantitative: Three experimental studies | Software development |
| 7. Time as subjective nuances in work settings | (Tryggestad, 2013) | Case study: Ethnography | Construction |
| | (Brookes et al., 2017) | Case study | Megaprojects/infrastructure |
| | (Leybourne, 2010) | Case study | Superyacht construction |

DISCUSSION

This study addressed the research question: How is time conceived and researched in project management literature? Following the review, several novel insights on time in projects emerged. Time is considered an important element both in project management literature and practice. Yet, compared with its central role in project management, explicitly researching the role of time in projects remains rare. This is evidenced by there being just 101 relevant research papers in half a century of scholarship on the topic in key project management journals. In that project management literature, time is conceptualized both objectively and subjectively, but the objective conception dominates. The limited attention paid to the effect of subjective time in projects is problematic because understanding the phenomenon of subjective time can help to better manage projects and improve our theoretical knowledge (Levasseur et al., 2020; Shipp & Aeon, 2019).

Agenda for future research and study limitations

Fertile ground for research on time in projects was identified in this review. The findings call for explicit attention to both objective and subjective time constructs in project management literature. Addressing both objective and subjective time related issues in research can help practitioners in resolving time related issues in projects. Projects are facing time related issues, for instance, according to PMI (2020) 41% of information technology projects failed to meet the initial deadline. Leading reasons for the failed projects include, inaccurate time estimates 25% and team member's procrastination 13%. Putting time at the forefront of the research can potentially resolve some of these issues (PMI, 2018). In the domain of objective time, a stream of literature has theorized time as a factor that distinguishes projects, or temporary organizations, from routine organizations (Sydow & Braun, 2018; Turner & Müller, 2003). However, further clarity is required: how temporary is temporary? Future empirical studies can test the temporary nature of projects and

demonstrate that projects are different from permanent organizations. These empirical distinctions can help managers to devise targeted strategies for both temporary and permanent organizations. Having targeted and separate management strategies for temporary and permanent organizations is likely to enhance project and organizational performance.

The embeddedness of projects in permanent organizations has been theorized, as have inter-organizational aspects of projects (Steen et al., 2018; Sydow & Braun, 2018), but empirical studies are required to test embeddedness phenomena and their influence on project outcomes. Empirical studies investigating key connections between temporary and permanent organizations can add clarity regarding flow of information and resource allocation between temporary and permanent organizations. Clear linkages and processes can potentially enhance project managers' knowledge and help improve the performance and productivity of projects and the relationship to parent organizations.

Researchers have focused on developing activity time estimation models (Chang et al., 2013; Cox, 1995; Gong & Hugsted, 1993) and project success and performance models (Sanchez & Terlizzi, 2017), but future studies are required to empirically test and integrate these models for clarity and simplicity. When researchers empirically test the effectiveness of different models in different contexts, they may conclude that certain models are only effective in particular contexts, and clarity around this will help reduce confusion about different models. Similarly, several models have been developed to estimate and manage time-cost trade-offs (Haga & Marold, 2004; Vanhoucke et al., 2005), and future research could integrate and empirically test these models for further clarity.

The idea that projects are a context in which organizational phenomena can be studied has gained popularity (Braun et al., 2013; Nuhn, 2016; Tabassi et al., 2019); however, time as a construct in, and a focus of, these studies is limited. Future studies could explicitly incorporate time in the form of a deadline or project duration as a context of the study to

broaden our theoretical and empirical knowledge. Studying the direct influence of deadlines on project phenomena may help in clear theorization of the influence of deadlines and project durations on organizational processes. These studies can increase our understanding of the impact of deadlines on project team members and outcomes and help improve project performance.

A handful of studies have focused on investigating project-related phenomena over a period of time, and future research can benefit from this strand of research in unravelling the changes to project-related phenomena over time by undertaking longitudinal studies. Longitudinal studies can help us understand gradual changes in project management phenomena with the passage of time and help devise effective strategies to keep project performance high. Studying project phenomena over time can help in answering the questions like when a phenomenon happens and the understanding of what, why, and how of the conventional organizational theories in project context over time.

A small number of studies in the project management literature have focused on the subjective conception of time, and more research is required in this domain to increase our theoretical understanding and managerial effectiveness. A few studies on temporal differences in rhythm and pace between different projects and between projects and their parent organizations have concluded that a high temporal fit is beneficial for effective management and successful project execution (Dille, 2013; Stjerne et al., 2019). Future research could focus on the mechanisms through which a high temporal fit may be achieved. Similarly, researchers could investigate the influence of temporal fit at team and individual levels, because different teams have different temporal rhythms and different individuals in a team also have different individual temporal rhythms. Understanding these complex mechanisms at project, team, and individual levels is crucial for better understanding the phenomena and for the effective management of projects, teams, and individuals.

Future studies could focus on understanding individual temporal differences to help project managers in effective people management and employee retention. A few studies have addressed subjective differences in perceived time pressure (Khedhaouria et al., 2017; Nordqvist et al., 2004) and time-saving bias (Fink & Pinchovski, 2020), but further research is required to explore other important temporal differences like polychronicity, temporal focus, and pacing style. Polychronicity relates to an individual's preference for doing one or multiple activities simultaneously, temporal focus is an individual's thinking about the past, present, and future, and pacing style refers to an individual's approach to meeting deadlines. Studying these individual temporal differences may help project managers to manage their project workforce more effectively.

Despite the contributions of this literature review, there are limitations. In particular, this study included only publications in English, and while publications in the three premier project management journals were included, by design the study did omit other research outlets and an assessment of how time and projects are studied in those outlets.

CONCLUSION

This study examined how time is conceived and researched in project management literature and provides a comprehensive overview of time-related project research for researchers. This research makes two key contributions to project management literature. The study is the first to focus on a systematic assessment of time specifically in project management literature, as opposed to studies analyzing time more generally. Second, gaps in the project management literature regarding the study of time are highlighted through a systematic review and analysis. This has allowed us to develop a coherent agenda to guide future research and advance our understanding of time as a critical element in project management.

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Conclusion to Study 1

Study 1 confirmed that while time is at the center of project management practice, it is not at the heart of project management research. Only 101 research articles have focused on time-related phenomena in nearly five decades of project management scholarship in the three premier journals in the field. During the systematic review of relevant research, seven themes emerged: time as a distinguishing feature of projects; time as a success criterion for projects; time as a distinct organizational context for projects; time as a frame of reference for studying project-related phenomena; time as different temporal rhythms in projects; time as subjective individual differences between project personnel; and time as subjective nuances in work settings. Analysis of these 101 research articles reveal that objective time has gathered more scholarly attention than subjective time, as 87 of the 101 articles focus on an objective conceptualization of time. Study 1 revealed major gaps in the time-related project management literature and presented an agenda for future research.

The research gaps identified in Study 1, regarding individual subjective time differences, are investigated and explored in the remaining studies of this thesis. Study 2 focuses on investigating the influence of individuals' thinking about time, that is, individuals' temporal focus, on their performance behaviors. Study 3 focuses on investigating the influence that a match between an individual's and their supervisor's approach to using time—polychronicity—and their approach to meeting deadlines—their pacing style—has on their behaviors and attitudes. Study 4 focuses on investigating the influence of the fit between individual and organizational polychronicity on employee turnover intentions.

**Chapter 3. Study 2. Past, present, and future: Unpacking the phenomena of
temporal focus in organizations**

Introduction to Study 2

The results of Study 1 highlight that subjective time is under-researched in project management literature, and this limits our understanding of subjective temporal phenomena in projects. It is argued in Study 1 that understanding individual subjective time differences in projects can be beneficial for effective project management and for theory building around projects. Study 2 addresses the aspects of subjective time relating to how individuals think about time and the relevant research gap identified in Study 1. Study 2 thus focuses on investigating the influence of an individual's thinking about time—their 'temporal focus' or attention towards past, present, and future—on their performance behaviors. This study draws from mental time travel theory and time perspective theory and uses data from semi-structured interviews with 34 project professionals working on a variety of projects in Australia, with the aim of uncovering the underlying mechanisms and intricacies of the influence of an individual's attention towards past, present, and future on their performance behaviors.

This paper has been prepared according to the publication guidelines for *Human Relations*.

**Past, Present, and Future: Unpacking the Phenomena of Temporal Focus in
Organizations**

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ABSTRACT

An individual's temporal focus, which is their subjective attention towards the past, present, and future, often influences their attitudes and shapes their behaviors. Because studies on temporal focus in organizations have tended to emphasize the positive role of a future focus in organizations, the role of both past and present foci is not well known. Similarly, temporal focus studies have concentrated on the role of subjective attention towards past, present, and future separately, and so the collective role of attention towards past, present, and future in organizations is not well understood. These temporal focus literature limitations are problematic because they hinder our understanding of how individuals perceive their subjective attention towards past, present, and future and relate it to their performance in organizations. Understanding these phenomena is important for the theoretical clarification of subjective timerelated features of organizations to support the management of them.

Integrating time perspective theory and mental time travel theory into an overarching framework, we examined the data from interviews with 34 project professionals in Australia, producing three main findings. First, temporal focus in all directions—past, present, and future—shapes and informs individuals' effective performance. Second, along with the individual influence of the past, present, and future on an employee's performance, there is also a collective influence of the past, present, and future. Third, all three temporal categories, past, present, and future, are interconnected and inform each other in decision making and organizational operations. Theoretical implications and directions for future research are discussed.

Keywords:

Future focus, mental time travel, past focus, present focus, qualitative, subjective time, temporal focus, time perspective theory

Past, Present, and Future: Unpacking the Phenomena of Temporal Focus in Organizations

“Whoever wishes to see the world truly, to rise in thought above the tyranny of practical desires, must learn to overcome the difference of attitude towards past and future, and to survey the whole stream of time in one comprehensive vision.” (Russell, 1918, p. 22)

Time plays a central role in organizational life (Bluedorn & Denhardt, 1988; Shipp & Cole, 2015), but it does not merely exist objectively as clock time. Objective time is linear, progresses in a unidirectional way, is homogeneous, and uniform. Individuals also experience time in organizations in subjective ways. Subjective time manifests in richer forms that are non-linear, heterogeneous, and multiform (Ancona et al., 2001; Shipp & Cole, 2015; Shipp & Fried, 2014). An individual’s subjective experience of time varies according to their innate traits and ingrained beliefs, and the influences of external situations or events (McGrath & Kelly, 1986; Shipp & Fried, 2014). There has been a proliferation of recent research examining a variety of temporal constructs that capture how time is subjectively valued, understood, used, or perceived in organizational contexts (Kooij et al., 2018; Shipp & Cole, 2015; Shipp et al., 2009). Despite the growth in research on subjective time, the literature on one important subjective time construct, temporal focus, is scarce and requires further scholarly attention (Shipp & Aeon, 2019; Shipp & Jansen, 2020).

An individual’s attention towards the past, present, and future is referred to as their temporal focus (Shipp et al., 2009). Temporal focus is related to an individual’s temporal cognitions and is used to predict their attitudes and behaviors, such as their wellbeing and self-esteem (Bluedorn, 2002; Shipp et al., 2009). Subjective attention towards each of the temporal categories of past, present, and future influences organizational behaviors and attitudes differently (Shipp & Aeon, 2019; Zimbardo & Boyd, 1999). Temporal focus is considered a fundamental determinant of self-regulation (de Bilde, Vansteenkiste, & Lens,

2011), goal setting (Adelabu, 2008), attentional focus (Shipp et al., 2009), risk-taking (Zimbardo, Keough, & Boyd, 1997), achievement (Simons et al., 2004), mental health (Webster, Bohlmeijer, & Westerhof, 2014), financial knowledge and entrepreneurship (Gielnik, Zacher, & Wang, 2018), environmental engagement (Arnocky, Milfont, & Nicol, 2014), healthy behaviors (Adams & Nettle, 2009), and wellbeing (Holman et al., 2016; Stolarski, Fieulaine, & Zimbardo, 2018). Although research on temporal focus is growing, the influence of temporal focus on performance of employees is under-researched. The vast majority of temporal focus studies have concentrated on future focus only and have linked future focus to positive work outcomes (e.g. Bruderer Enzler, 2013; Gielnik et al., 2018; Kooij et al., 2018; Maki, Dwyer, & Snyder, 2016). This emphasis on future focus limits our theoretical understanding of the role of past and present focus and leaves important research questions unanswered. In particular, how do individuals perceive their subjective attention towards past and present and relate it to their performance in organizations?

Another issue in the temporal focus literature is that it is mainly driven by the notion that individuals have one dominant focus which influences their attitudes and behaviors. According to the proponents of this research stream, some individuals are past-focused, some are present-focused, and others are future-focused (Holman & Silver, 1998). Individuals characteristically think about past, present, or future only, without allowing for the allocation of attention to more than one time period (Zimbardo & Boyd, 1999). Proponents of this view are guided by time perspective theory, which posits that the ‘ticking of the clock’ is not the only influencer of human behavior, but that how individuals think about time and how they assess time also influences individual behaviors and attitudes. Time perspective theory categorizes individuals into distinct chronological categories of past positive, past negative, present fatalistic, present hedonistic, and future, which serve as stable individual differences (Zimbardo & Boyd, 1999).

Contrary to the rigid trait-based view of time perspective theory, there is research evidence suggesting that temporal focus fluctuates at the within-individual level (Rush & Grouzet, 2012). Such fluctuations in attention towards past, present, and future are supported by mental time travel theory. Mental time travel theory (MTTT; Suddendorf & Corballis, 1997) asserts that individuals can mentally travel backward or forward in time, imagining possible future events as well as re-experiencing past ones. MTTT emphasizes that individuals can detach themselves from their present to re-live their past experiences or to live what is coming in the future, which indicates that temporal focus is a state rather than a trait. To address this issue of whether the phenomena are trait-based or state-based, we use both time perspective theory and MTTT as starting points to investigate how individuals perceive their attention to past, present, and future and relate this to their performance.

Despite MTTT and empirical evidence that there are fluctuations in subjective attention towards the temporal foci of past, present, and future, current empirical research generally overlooks the link between the past, the present, and the future. This leaves another important question unanswered: How is an individual's attention to past, present, and future interlinked and how do these inform each other? Addressing this question is important to clarify the theoretical ambiguities in temporal focus research and for better management of personnel in organizations. Integrating time perspective theory and MTTT can uncover the underlying mechanisms of the relationship between an individual's temporal focus and their performance in an organization and lead us towards theoretical sophistication in this field.

Answering the above two research questions is important because adopting a temporal lens can increase our understanding of the 'what, why, and how' of conventional organizational theories (George & Jones, 2000; Zaheer, Albert, & Zaheer, 1999). This study can extend our knowledge and may bring novel and useful explanations for conventional theories (Ancona et al., 2001). It is important to understand how individuals perceive their

subjective attention towards past and present and relate this to their performance in organizations, and to understand how individuals' attention to past, present, and future inform each other. A better understanding of these phenomena can help in theoretical clarification and better management of organizations (Shipp & Jansen, 2020).

We seek answers to the above temporal focus research questions using time perspective theory and MTTT as guiding frameworks, taking an in-depth qualitative interview approach. This study uses findings from 34 semi-structured interviews with experienced project managers and team members in Australia. This study presents how the interviewees relate their attention towards the past, present, and future to their performance and how they link the temporal categories of past, present, and future.

This study contributes to the growing literature on individuals' temporal focus in organizations and responds to the call for research clarifying the role of temporal focus on employee performance and organizational phenomena (Shipp & Aeon, 2019; Shipp & Jansen, 2020). Through this study, we contribute to theory by unveiling the complex mechanisms and influences of temporal focus on employees' performance and extend time perspective theory by integrating elements of MTTT. We first present relevant literature on temporal focus and discuss time perspective theory and mental time travel theory, the guiding theoretical frameworks for this study. We then describe the context and methodology of the study and present the findings. We discuss the implications of the results and provide an agenda for future research.

Temporal Focus

Temporal focus is considered an individual difference (Shipp et al., 2009; Zimbardo et al., 1997) and an essential element in understanding human behavior and attitudes in organizations (McGrath & Rotchford, 1983; Shipp & Aeon, 2019). Temporal focus is the "allocation of attention to the past, present, and future" (Shipp et al., 2009, p. 2). Individuals

freely allocate their attention to past, present, and future; it is not necessarily the case that if individuals attend to one temporal category, then they have to ignore the other two (Shipp et al., 2009). Unlike strict classifications of time perspective (Harber, Zimbardo, & Boyd, 2003) or time orientation (Holman & Silver, 1998), which create virtual boundaries for individuals by limiting them to only one chronological category, temporal focus provides flexibility to freely ‘mentally wander’ between all three chronological categories (Shipp et al., 2009).

According to time perspective theory (Zimbardo & Boyd, 1999), the three chronological foci tend to influence human behaviors and attitudes differently. Past focus relates positively to neuroticism and trait anxiety (Zajenkowski et al., 2016). Past-focused individuals experience increased depression and dissatisfaction with life compared to future-focused individuals (Bluedorn, 2002; Nuttin, 2014; Zimbardo & Boyd, 1999). Past focus relates negatively to mindfulness (Muro et al., 2017), self-esteem (Perry et al., 2015), and core self-evaluation (Zacher, 2014), and past-focused individuals are likely to be pessimistic and have an external locus of control (Shipp et al., 2009). Past-focused individuals are prone to engage in harmful behaviors such as internet addiction (Przepiorka & Blachnio, 2016) and expectation of negative affect (Stolarski et al., 2014), which translates into greater distress and worry (Zajenkowski et al., 2016). These findings suggest a higher past focus may be maladaptive.

Present-focused individuals tend to be extraverts (Shipp et al., 2009), and enjoy higher life satisfaction (Stolarski & Matthews, 2016) and core self-evaluation (Zacher, 2014) than past-focused individuals, and are concerned about interactional justice (Cojuharenco, Patient, & Bashshur, 2011). Adverse outcomes of a present focus include risk-seeking behaviors (Nadkarni & Chen, 2014; Zimbardo & Boyd, 1999), drug and alcohol use (Keough, Zimbardo, & Boyd, 1999), procrastination, and reactivity rather than proactivity (Alberts & Dunton, 2008; Ferrari & Díaz-Morales, 2007). Present-focused individuals report

a desire to synchronize their work with colleagues, but in reality, they show less synchronizing behaviors (Leroy et al., 2015), which can be detrimental to team cohesion. Although focusing on the present moment may be satisfying to some extent, it may lead to harmful behaviors that put individuals at risk in terms of emotional, physical, and work outcomes (Shipp & Aeon, 2019).

Future-focused individuals tend to be higher on conscientiousness than past-focused individuals (Zimbardo & Boyd, 1999), are generally extraverts (Shipp et al., 2009), and are interested in distributive justice (Cojuharenco et al., 2011). Future-focused people tend to be more adaptable and concerned about their careers than past- and present-focused people (Zacher, 2014; Zacher & de Lange, 2011), are more engaged in goal setting, and are proactive and less likely to procrastinate (Alberts & Dunton, 2008). Compared to those with past and present temporal focus, future-focused individuals usually care more about their health (Griva, Tseferidi, & Anagnostopoulos, 2015), are concerned about environmental issues (Bruderer Enzler, 2013; Milfont, Wilson, & Diniz, 2012), and are likely to volunteer (Maki et al., 2016). Future-focused individuals perform more prosocial behaviors (Baumsteiger, 2017; Strobel et al., 2013), have higher academic performance (Zimbardo & Boyd, 1999), and more responsible financial behaviors (Joireman, Sprott, & Spangenberg, 2005), which ultimately affords them higher socioeconomic status (Aspinwall, 2005) than past-focused individuals.

The above mentioned findings suggest only a future focus is beneficial to life and work outcomes, which downplays the role of a past focus and a present focus despite these foci likely contributing to individuals' performance. These findings suggest that temporal foci of past, present, and future influence organizational phenomena and behaviors separately and there is no freedom for individuals to shift their attention across all three chronological categories. But according to MTTT, it is likely that individuals may shift their attention

between the past, present, and future. These findings further suggest that individuals refer to only one chronological category and do not take information from the other two categories. We expect that there might be free flow of information between past, present, and future, per MTTT. Finally, as findings in the current literature suggest that attention to past, present, and future influence organizational behaviors, it is likely that an individual's attention to past, present, and future may influence their performance in organizations.

Time Perspective Theory

Time perspective theory (Zimbardo & Boyd, 1999) posits that an individual's behaviors, emotions, and perceptions are shaped by the subjective nature of time, specifically by an individual's tendency to focus on the past, the present, or the future. The basic principle of time perspective theory is that individuals mentally divide their personal experience into past, present, and future, and that this influences their judgments, decisions, and activities (Zimbardo & Boyd, 1999, 2008). Time perspective theory classifies individuals according to the five strict time perspectives of past positive, past negative, present-hedonistic, present-fatalistic, and future perspective. The past positive perspective is an individual's tendency to focus on the positively evaluated past. In contrast, a past negative perspective is an individual's tendency to focus on the negatively evaluated past. A present-hedonistic perspective is an individual's tendency to take advantage of pleasure 'here and now' at all costs. In contrast, a present-fatalistic perspective is an individual's tendency to passively exist in the present, having a belief that life is governed by fate. A future time perspective is an individual's tendency to think about the future in terms of goals to be achieved and tasks to be done (Zimbardo & Boyd, 1999). An individual's time perspective influences their behaviors and attitudes. Although time perspective theory serves as one of the important frameworks in temporal research, it is considered potentially limiting because it creates virtual temporal boundaries (Shipp et al., 2009) and marginalizes an individual's ability to move freely

between past, present, and future. In this study, we use time perspective theory as an overarching theoretical framework, but to address its potential weaknesses, we integrate it with MTTT.

Mental Time Travel Theory

Mental time travel theory (MTTT; Suddendorf & Corballis, 1997; Tulving, 1983) posits that human beings can mentally travel in time either to their past or future. In mental time travel to the past, individuals re-live their experiences. In mental time travel to the future, individuals simulate the future and live their anticipated experiences. MTTT asserts that only humans have this unique ability to detach themselves from their current environment and live in either the past or the future (Suddendorf & Corballis, 1997). Mental time travel to the past and to the future is primarily dependent on memory and simulation of future events by an individual, respectively.

Mental time travel to the past is dependent on two distinctive categories of memory, episodic memory and semantic memory (Suddendorf & Corballis, 1997; Tulving, 1972). Episodic memory refers to the capacity for recollecting an autobiographical memory of events that occurred in a particular spatial and temporal context; for instance, what happened in the last status meeting (Tulving, 1972). Semantic memory refers to the capacity for recollecting general knowledge and facts about the world (Tulving, 1972); semantic memory is a mental thesaurus of the organized knowledge an individual possesses about the meaning of objects, words, symbols, and all manner of facts. Both types of memory are declarative in the sense that individuals are retrieving information explicitly, and they are aware that stored information is being retrieved. Both episodic and semantic memory enable the individual to disassociate themselves from the present state and travel to their past.

On the other hand, mental time travel to the future is dependent upon two distinct categories of simulation or anticipation, episodic simulation and semantic simulation.

Episodic simulation is the construction of a detailed mental representation of a specific autobiographical future event (Schacter et al., 2008), while semantic simulation is the construction of a detailed mental representation of a general or abstract state of the world. Both episodic and semantic simulations enable the individual to disassociate themselves from the present state and travel to their future. MTTT considers episodic memory and episodic simulation as forms of self-projection, which allow the individual to experience mental states that are removed from the immediate present (Buckner & Carroll, 2007). MTTT also links episodic memory to episodic simulation in that episodic memory provides inputs to episodic simulation and so facilitates the time travel.

Although MTTT is a well-known framework in neuropsychology and is used as a guiding framework in a variety of situations—for instance, in understanding and treating individuals with brain injuries—its use in organizational psychology and subjective time literature is limited. We integrate MTTT into our research to understand how individuals' mental time travel to the past or future informs their decisions to carry out in-role and extra-role performance behaviors in the present. We use MTTT to extend time perspective theory and to address our research questions.

The Project Management Context

Time-bound organizations have emerged as a specific organizational type. Organizational entities such as movie sets (Bechky, 2006), construction projects (Harry et al., 2004), theater productions (Goodman & Goodman, 1972), organizing committees of sports events (Løwendahl, 1995), emergency response teams (Weick, 1993), research and development projects, software development projects (Burke & Morley, 2016), and task forces (Saunders & Ahuja, 2006) are seen as temporary organizations (Bakker, 2010). Temporary organizations are the “organizational equivalent of a one-night stand” (Meyerson et al., 1991, p. 167) and a “hyper-efficient organizational form freed from any organizational

slack” (Grabher, 2004, p. 1491). Temporary organizations are demarcated as “a set of organizational actors working together on a complex task over a limited period” (Bakker, 2010, p. 468).

As we are interested in understanding the phenomena of temporal focus in the workplace, the temporary nature of project-based organizations provides a suitable context because they have an inbuilt time component. That is, the working environment is strongly influenced by time through the daily enactment of deadlines, movement between projects, changing work teams, and changing task priorities. Studying the temporal context along with the main phenomena of temporal focus is considered an important approach because it increases the horizons of our understanding of the conventional organizational theories (George & Jones, 2000; Zaheer et al., 1999). Interviewees in our study were professionals from information technology, construction, emergency response team, and law firms, as projects are the most prevalent form of work organization in these industries (Burke & Morley, 2016; Harry et al., 2004).

METHODS

Interviews were conducted with professionals from project-based organizations operating in Sydney, Australia. Convenience and snowball sampling were used to target individuals most aligned with our sample requirements. At professional events of a global project management association, attendees were invited to participate in the research by responding to the researchers’ email contained in an information sheet distributed at these events. After each interview, interviewees were asked to suggest further participants, who were then formally invited by phone or email.

Semi-structured interviews were conducted to address the two research questions: 1) How do individuals perceive their subjective attention towards past and present and relate it to their performance in organizations?; and 2) How is an individual’s attention to past, present, and future interlinked and how do these inform each other? Although semi-structured

interviews are widely used in social sciences (Bradford & Cullen, 2013), their use in temporal research is not widespread. Semi-structured interviews were appropriate for this investigation because they give new insights into social phenomena, allowing interviewees to reflect on and consider a variety of subjects in a different way (Creswell, 1998; Miles & Huberman, 1994), and allowing researchers to explore subjective viewpoints (Flick, 2014) and gather in-depth accounts of peoples' experiences.

An "interpretive" temporal view (Shipp & Cole, 2015, p. 249), which considers only an individual's subjective time, was adopted in the interviews. The interpretive temporal view "reflects work that focuses squarely on subjective time, such as how individuals' cognitions about the past and future (i.e., retrospections and anticipations) can affect current outcomes" (Shipp & Cole, 2015, p. 249). By taking this view, we examine how individuals perceive and relate their subjective attention towards past, present and future to their functioning in organizations and how individuals' past, present, and future inform each other in the workplace.

An interview schedule containing open-ended questions was developed to guide the interviews (Choak, 2013). Interviews opened with a broad question, "How do you think about time when you are at your workplace?", followed by the prompt "How do you think about time in terms of past, present, and future?" The initial interview schedule was revised after eight interviews to capture deeper and broader perspectives on the research questions. Interviewees discussed how they think about time regarding past, present, and future, how much attention they devote to these temporal categories, and how they relate past, present, and future to each other. Interviews were audio-recorded and handwritten notes were taken to aid data analysis. Before every interview, participants were informed about the recording, ethics and confidentiality, and written consent was obtained.

Interviews ranging from 30 to 65 minutes were conducted with 34 individuals aged 29 to 75 years, with an average of 17 years of project experience. Although interviewees had diverse industry backgrounds, they all worked in projects. Interviewees included project managers, senior project management officers (PMOs), managing directors, project team leaders, project team members, human resource consultants, and health and medical response team members. The diversity of roles helped address the research questions and improve the generalizability of the findings. Table 1 presents interviewees' demographic information.

Table 1. Participant demographics

| | Pseudonym | Gender | Age | Sector | Title/Position |
|----|-----------|--------|-----|---------------|----------------------------|
| 1 | Richard | M | 47 | IT | Development lead |
| 2 | Lincoln | M | 30 | IT | Project manager |
| 3 | Cassidy | F | 38 | Construction | Project manager |
| 4 | Mohammed | M | 42 | Telecom | Project manager |
| 5 | Christina | F | 38 | IT/banking | Project manager |
| 6 | Jenny | F | 47 | Medical | Project manager |
| 7 | Hugh | M | 35 | IT | Project team member |
| 8 | James | M | 41 | IT | Project team member |
| 9 | Ali | M | 35 | IT | Project team member |
| 10 | Rick | M | 75 | IT/consultant | CEO/Project manager |
| 11 | Sam | M | 32 | IT | IT engineer |
| 12 | Samuels | M | 41 | IT | Project management officer |
| 13 | Thomas | M | 43 | IT | Chief information officer |
| 14 | Nathaniel | M | 42 | IT | Senior PMO |
| 15 | William | M | 39 | Construction | Associate PMO |
| 16 | Jackie | F | 37 | Construction | Senior project manager |
| 17 | Jack | M | 35 | Construction | Project manager |
| 18 | Malik | M | 44 | Law/IT | Head PMO |
| 19 | David | M | 41 | Construction | Project manager |
| 20 | Paul | M | 35 | IT | Project team member |
| 21 | Tim | M | 36 | IT | Project team member |
| 22 | Katrina | F | 29 | Construction | Civil drafter |
| 23 | Rebecca | F | 34 | Construction | Senior project manager |
| 24 | Chris | M | 33 | Construction | Project manager |
| 25 | Derek | M | 32 | IT | Project manager |
| 26 | Mark | M | 49 | IT | Project manager |
| 27 | Sarah | F | 42 | IT | Project manager |
| 28 | Rashmi | F | 38 | IT | Project manager |
| 29 | Benjamin | M | 38 | IT | Managing director |
| 30 | Ishfaq | M | 35 | IT | Senior system analyst |
| 31 | Jamil | M | 40 | IT | Business analyst |
| 32 | Syed | M | 41 | IT | Project manager |
| 33 | Grant | M | 37 | IT | Project manager |
| 34 | Leah | F | 39 | IT | Project manager |

Data Analysis

We analyzed the interview data based on a three-stage procedure (Creswell & Clark, 2018; Miles, Huberman, & Saldaña, 2013). In the first stage, the data were prepared for analysis by transcribing, which enabled familiarity with, and enhanced understanding of, the data (Braun & Clarke, 2006). In the second stage, the data were reduced to themes through a coding process using thematic analysis (King, 2004), a method used for “identifying, analyzing, and reporting patterns (themes) within the data” (Braun & Clarke, 2006, p. 79). Thematic analysis, not constrained by a specific epistemological position, provides a structured method for identifying key themes in a data set, allowing analysis of a large amount of data from multiple participants to be synthesized into a meaningful account (Boyatzis, 1998). While coding the data, a template analysis approach was used, using *a priori* themes (Brooks et al., 2015). These themes were obtained from the same literature from which the interview protocol was derived and refined after analyzing the first five interviews (Brooks et al., 2015). The template enabled consistent data analysis and offered the flexibility to incorporate new themes as the analysis progressed (Brooks & King, 2016; King, 2004). We discussed and questioned the template, coding process, assumptions, and interpretations (Saldaña, 2009) to get to a reliable answer to our questions. A 15-point checklist for thematic analysis (Braun & Clarke, 2006) was used to ensure a holistic and coordinated picture was generated from the themes (Bazeley, 2009).

In the third stage, we present the findings from the data. To add further rigor and ensure the credibility and reliability of our analysis, we include excerpts from the interviews (Lincoln & Guba, 1986). Adding direct excerpts from interviews adds value to analysis by establishing a clear and transparent link between findings and original data.

RESULTS

We now present the major findings of how interviewees use their temporal cognition while performing their jobs and executing their projects (in referring to interviewees by

name, pseudonyms are used). We first present findings related to how interviewees perceive their subjective attention towards past, present, and future and relate this to their performance at work and then present findings on how interviewees' past, present, and future attentions are interconnected.

Perceptions of Temporal Focus

Interviewees talked about their attention towards the past, present, and future, and specifically the relationship between their attention to these temporal categories and their performance at work. Interviewees described attention towards all three temporal foci as being relevant and discussed the influence of each. Interviewees discussed how their attention towards past, present, and future shapes and facilitates their behaviors at work. We first present the discussion about past, then about present, and finally about future. Interviewees related their attention towards the past as an important factor for, and one of their guides to effective performance, because their experience facilitated reducing errors:

You know you have to learn from the past don't you? You have to learn from your mistakes. You have to remember what you did well or what has gone well and you have to remember what you do wrong or has gone wrong so that the task you are doing now you don't make a repeat of things that went wrong and you do repeat things that did work well – Jamil

Interviewees related their past to effective performance because they had learned how to perform tasks effectively and quickly. They discussed their past as a source of learning and associated it with better performance:

My experience in drafting contracts enables me to draft a contract quickly and avoid any errors because I have been doing it for several years and I have learned my lessons – Chris

Interviewees revealed the role of memory in effective performance when they were discussing their attention to past and their performance. They associated memories with effective performance:

I perform a task quickly and effectively when I have a clear memory of how I did it last time – Ishfaq

Interviewees used their past as a library of experiences from which they can draw information when needed to perform in the organization. They highlighted the importance of attending to past when performing tasks in organization.

In terms of attention to the present, interviewees used the present as an action ground. They explained that attention to the present is important because the actual tasks and projects are executed in it and high attention to the present can enhance performance by reducing errors and increasing efficiency:

I concentrate on the task at hand without all the other distractions going along which helps me in delivering outcome on time without any major issues – Derek

Interviewees associated a high attention to the present with meeting deadlines and the timely delivery of projects:

You are probably able to do a more accurate job thinking about the task in the now as long as you have got all the information that you need to do your task adequately and timely – Lincoln

Thus, interviewees use their present focus to act and focus on the present to ensure quality output and timely delivery. Interviewees emphasized the importance of their attention to the present for effective performance in the organization.

In terms of attention to the future, interviewees explained that it is important to attend to the future when you are performing at work. They explained that attention towards the future ensures they are working towards a goal which helps them in performing effectively:

If you are not aware of what is in the future, then your task output is not going to be very good. But if you are aware of the future then obviously that is going to increase your efforts and task output – Rick

Interviewees associated high attention to the future with planning and goal setting. They explained that having a good future plan can be beneficial and will help them perform better than not having a plan:

If you have a really good plan, one that has been well thought out and has a heavy focus on and a high amount of detail, so I think that has a very good impact on the task performance – Jenny

Interviewees revealed the role of simulation in effective performance when they were discussing their attention to the future and their performance. They associated simulation of the future with effective performance:

I am expecting a promotion at the end of this year, I have a clear picture of my future which is guiding my efforts and the amount of work right now – Benjamin

In addition to discussing their attention to past, present, and future separately and relating each to their performance at work, interviewees revealed the collective influence of attention to past, present, and future on their performance. Interviewees told us of a joint influence, shaped as attention to all temporal categories, which affects their performance at work. They explained that this collective past, present and future attention influences their performance at both project, organizational, and individual levels.

At the project level, interviewees said collective attention towards all three temporal categories is important because it helps facilitate decision making and effective performance:

I believe past, present, and future play a crucial role in project management. We utilize the documented lessons learned from the previous projects to help us in a current project, and then at the end of the project we prepare 'lessons learned'

documents from the current project to facilitate future projects. It's like a cycle, which is very helpful for project performance – Leah

Collective attention to past, present, and future was deemed crucial in decision making for selecting a project. Interviewees told us that a clear record of past projects, currently available resources, and future directions help in deciding what type of projects to undertake to achieve the organizational strategic goals:

Imagine the potential chaos if we undertake a project for which we have no experience, we have no or limited resources, and [which] is not aligned to our long-term goals – Nicholas

Collective attention to past, present, and future was also deemed important for the effective management of human resources in projects. Because projects are temporary, project workforces are based upon temporary roles. Interviewees told us that attention to past, present, and future collectively helps them in managing the project workforce:

As you know, project teams disband after the projects are complete. A clear account of who came from where, and who did what in the project lets us decide who goes where after the project is complete – Hugh

At the individual level, interviewees told us collective attention to past, present, and future is important because it facilitates rational decision making:

I think about past, present, and future at every moment. They help and guide me in performing well because my past is like a library of experiences both good and bad, future is where I want to be, and present is my action field – Muhammad

Interviewees also said collective attention towards past, present, and future is important because it facilitates their performance:

I quickly look into my past to see whether I have performed such a task, do I have lessons learned or best practices, and then I look into its anticipated outcomes, how is

this task related to my goals, and I consider my current position, do I have resources and capacity to do it? This exercise helps me improve my performance because I undertake projects and tasks for which I have experience, capacity, and [that] are aligned to my personal growth – Grant

Interviewees said collective attention towards past, present, and future is important because it also helps them decide whether to help others and to initiate volunteering behaviors:

I used to volunteer for events in my previous organization, but it did not turn out well. I had to spend extra hours, stay late in the office, and received nothing in return. Now I only perform tasks which I am getting paid for – Rashmi

Interviewees said attention towards past, present, and future was an important factor in organizational settings and related it to their performance. They explained that attention to past and present, not just attention to future, is important for effective performance at work. Interviewees emphasized the novel phenomena of the collective influence of past, present, and future and related it to individual and organizational outcomes. As well as discussing this, each interviewee talked about how they think their past, present, and future are linked.

Interconnectivity of Past, Present, and Future

We now discuss how interviewees discussed and linked their attention to past, present, and future. Interviewees said they benefit from the information flow between past, present, and future, because at any given time:

I am not a hundred percent in the present because I am drawing on my experience and I am also considering the future implications of my current actions – Jackie

Interviewees said information flows from past and future to the present, and this influences how an individual performs at a particular moment:

The activities I perform now are influenced by my acquired experience and skills in the past, and by goals and intentions for the future – Christina

Interviewees identified that the interconnectedness of these temporal categories can be manifested in different ways and in different directions. In the above example, Christina explained the flow of information from past and future to inform the present. Other interviewees explained the interconnectivity of temporal categories in different combinations. For instance:

What I would do in the present and reflecting on the past helps me look into the future because I believe they all influence each other – Jack

The interconnected nature of past, present, and future was deemed important, as attending to all three foci allowed interviewees to perform better and avoid negative outcomes:

I cannot make good decisions and perform effectively based on just now, I consider my experiences and I look into the future of what I do now. Otherwise, I will be making instantaneous decisions and there will be a knock-on effect – Sarah

Interviewees discussed the connection between past, present, and future and emphasized the interconnectivity of the temporal categories. Interviewees emphasized that free flow of information between the temporal categories facilitates effective performance at individual and project levels.

DISCUSSION

The interviews provided insights into how individuals perceive their subjective attention towards past, present, and future and relate this to their performance at work, and insights into how their past, present, and future inform each other in the workplace. We started our investigations by asking interviewees about how they think about past, present, and future and how thinking about these chronological categories influences their performance in work settings. Extant literature suggests that interviewees would relate

attention to the past in a negative way to their performance and attention to the present ambiguously to their performance, and only attention to the future would relate positively to performance. Instead, we found that interviewees linked attention to all three categories with better performance and informed decision making. This finding is novel in temporal research, because previous studies have claimed that only a future focus is associated with positive work outcomes (Maki et al., 2016; Strobel et al., 2013).

Similarly, in line with time perspective theory and temporal focus, we assumed that attention to each of the past, present, and future would influence an individual's performance and decisions, and that paying greater attention to some temporal categories would be more beneficial than paying attention to others. Instead, the interviews revealed the collective influence of attention towards past, present, and future on an individual's performance and decisions. Interviewees showed us that collective attention towards all three is important for better performance at both individual and project levels. The collective influence of past, present and future on individuals' behaviors and decisions is embedded in early theorizations of time perspective as the totality of time—for instance, the “totality of the individual's views of his [sic] psychological future and his [sic] psychological past existing at a given time” (Lewin, 1942, p. 75). However, the finding that this collective influence is relevant is novel in empirical temporal focus research.

Finally, interviewees stressed that past, present, and future are interconnected, and these categories influence each other. They explained the mechanisms of the flow of information between the three temporal categories and argued that the flow of information between the temporal categories is not restricted. This finding is in line with MTTT, which advocates that individuals can mentally travel freely to past and future and away from their present. Although this finding is rooted in MTTT, it is novel in the temporal focus literature

because this body of research treats past, present, and future separately, and there has been no empirical evidence outlining an interconnectivity of the various findings.

Theoretical Contributions

This study contributes to the growing literature on temporal focus in organizations and presents several empirical findings and theoretical implications. First, attention to the past and the present is related to effective performance and decision making in organizations. This finding is a novel contribution to temporal focus theory because the current literature broadly assumes that only a future focus is related to positive work outcomes (Maki et al., 2016; Shipp & Aeon, 2019), that a present focus can be ambiguous (Zimbardo & Boyd, 1999) as it may lead to impulsive decision making, and that a past focus is generally associated with negative outcomes (Zajenkowski et al., 2016; Zimbardo & Boyd, 1999). However, our study reveals these relationships and influences are not as simply configured as this, particularly in work settings. Our findings reveal that a focus on the past and the present is also important, and decisions are based on information derived from all three temporal categories. Hence, instead of looking at and focusing on only the future, individuals in organizations should maintain a balanced attention towards all three temporal categories. This result coincides with recent findings of the influence of a time perspective balance on team adaptation in dynamic task contexts (Waller et al., 2020).

Second, temporal focus collectively in all three directions of past, present, and future tends to shape individuals' performance and decisions. This empirical finding supports early theorization about the totality of past, present, and future and its collective influence on human behaviors (Lewin, 1942). The finding is a contribution because most current temporal focus literature follows the notion that one dominant temporal category shapes and informs behaviors (Shipp et al., 2009; Zimbardo & Boyd, 1999). We do not disregard the value or significance of current literature, instead, with our findings we reinforce the need to also

study the important ‘collective’ aspect of temporal focus in relation to organizational behaviors.

Finally, the temporal categories of past, present, and future are interconnected and information flows freely between these temporal categories to inform an individual’s performance and decisions. This finding is a novel contribution to the temporal literature because the current theorization of temporal focus does not talk about the interconnectivity of past, present, and future. Although this notion of a link between past, present, and future is advocated by MTTT and used in neuropsychology, it has not been empirically studied in the temporal focus literature or in organizational settings. Time perspective theory outlines the influence of past, present, and future on individual attitudes and behaviors, but does not explain the link and flow of information between the chronological categories. Our finding in this regard extends time perspective theory by emphasizing the interconnectivity and flow of information between past, present, and future.

Limitations and Future Research

There are several limitations to this study. First, the study is not “completely temporal” (Shipp & Cole, 2015, p. 249), as we took an interpretive approach, accounting for the influence and analysis of subjective time only (i.e. past, present, and future) and did not account for objective time. Second, the template analysis we used for data interpretation and analysis is sometimes criticized for leading to superficial results and biased findings, although we did use a 15-point checklist (Braun & Clarke, 2006) and followed the guidelines of Brooks and King (2016) to ensure rigor in our approach. Third, qualitative inquiry provides a detailed understanding and helps study the underlying assumptions and mechanisms of phenomena (Miles et al., 2013; Saldaña, 2009), but it is sometimes criticized for limited generalizability (notwithstanding the range of sectors represented in our sample). Our qualitative inquiry is limited in drawing definite conclusions about the comparative

strength of relationships. Although our findings suggest that all three temporal foci influence performance behaviors, we cannot conclude which temporal category is more influential.

Our findings suggest ways in which the current state of theorization in temporal focus literature can be reworked, and we hope that future research will follow our findings. First, future research may focus on adopting a completely temporal view to examine how objective and subjective time interact in organizations. A completely temporal study may generate a more detailed and objective view. Second, future research may pursue our findings and test them quantitatively to further generalize the results. Future quantitative research can also establish the comparative influence of each of the three categories on performance behaviors. Finally, future research may focus on improving current temporal focus scales, or developing new scales, to capture the collective influence of past, present, and future.

CONCLUSION

Scholars investigating temporal focus in organizations have paid more attention to future focus than past and present foci. Our analysis using 34 in-depth interviews with time-concerned professionals revealed that past and present foci do influence individuals' decisions and behaviors. Our findings extend temporal focus theory by revealing the collective influence of past, present, and future and the interconnected nature of the three time categories. These results provide theoretical implications for researchers and suggest opportunities for future research in this domain.

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Conclusion to Study 2

Study 2 examined temporal focus, which is one of the main constructs of how individuals think about time. Temporal focus relates to the first of the two major facets of time perspective, how individuals think about time (as opposed to how individuals use time). In this study, two research questions were addressed. First, how do individuals perceive their subjective attention towards past and present and how do they relate these to their performance in organizations? And second, how are an individual's attention to past, present, and future linked, and how do they inform each other? The findings revealed that attention to all three temporal categories informs and shapes the performance of individuals. The findings further revealed a link between individuals' focus on past, present, and future and the free flow of information between these temporal categories. The findings of this study contribute to the theoretical understanding of temporal focus in particular and the understanding of subjective time differences in general.

We now move on to Study 3, which focuses on the second facet of the time perspective, how individuals use time.

**Chapter 4. Study 3. From misfit to fit: How individuals adjust to polychronicity
and pacing styles misfit**

Introduction to Study 3

Study 3 addresses that aspect of an individual's subjective time perspective related to using time and the relevant research gap identified in Study 1. An individual's time use is generally conceptualized through constructs of 'polychronicity', which is an individual's preference for engaging in multiple tasks simultaneously, and 'pacing style', which is an individual's approach to meeting deadlines. The results of Study 1 highlight that a better understanding of the fit between individuals' subjective time and their supervisors' subjective time can be beneficial for effective management and theory building in projects. Study 3 focuses on investigating the influence that an individual-supervisor fit in terms of polychronicity and pacing style might have on the employee's behaviors and attitudes at work. This study draws from person-environment fit theory and the theory of work adjustment, and it uses data from semi-structured interviews with 55 project professionals working in the software development industry in Pakistan. The study aims to uncover the underlying mechanisms and intricacies of the influence of an individual-supervisor fit on the behaviors of project personnel to provide theoretical insights into, and practical implications for, the management of projects. This study further examines misfit scenarios and how individuals adjust to these scenarios.

This paper has been prepared according to the publication guidelines for *Human Performance*.

From Misfit to Fit: How Individuals Adjust to Polychronicity and Pacing Styles Misfit

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ABSTRACT

Organizations are placing increased demands on employees' time, requiring them to simultaneously execute multiple projects and meet ever-contracting project deadlines. Employees are facing wellbeing and performance issues as they grapple with the ever-increasing demands on their time. These temporal tensions between organizations and their employees can be detrimental to project success, as well as to employee performance and wellbeing. The temporal fit between employees and their supervisors, as agents of organizations, is an underexplored but worthwhile domain for better understanding and addressing these temporal issues. Individual-supervisor temporal fit—the degree of alignment between an individual's temporal orientation and preferences and those of their supervisor—can improve employee wellbeing and enhance individual performance outcomes. Integrating time congruence and work adjustment theories, we studied how individuals perceive temporal fit for both polychronicity (preference for multitasking) and time pacing (pattern of meeting deadlines) in interviews with 55 IT professionals in Pakistan. The results reveal that individuals perceive a high temporal fit as a positive factor associated with positive individual and organizational outcomes. A low temporal fit triggers a temporal adjustment process, through which individuals reduce the negative outcomes of the lack of fit. Supervisors can play a vital role in improving temporal fit and in the adjustment process. By identifying temporal adjustment as a consequence of low temporal fit, this study reveals the complex mechanisms of temporal fit and more generally contributes to our understanding of temporal phenomena in organizations. These insights have practical implications for a range of organizations involved in complex time-dependent projects.

Keywords

Person-environment fit, polychronicity, temporal adjustment, temporal fit, theory of work adjustment, pacing styles

From Misfit to Fit: How Individuals Adjust to Polychronicity and Pacing Styles Misfit

Rapidly changing competition, technologies, and client needs have created temporal challenges including short deadlines, complex and dynamic coordination of multiple projects, and continually fluctuating task goals (Hamm, 2006; Mohammed & Nadkarni, 2011). Shorter deadlines and simultaneous multiple projects create challenges for organizations, such as reduced employee productivity and wellbeing and increased staff turnover. These challenges require an advanced understanding of temporal concepts and careful management of temporal issues and resources in teams and organizations (Lientz & Rea, 2016; Shipp & Jansen, 2020; Shipp & Richardson, 2019). However, temporal research remains sparse and temporal phenomena remain perhaps some of the most neglected critical issues in project and organizational research (Delisle, 2019; Kozlowski & Bell, 2012; Shipp & Jansen, 2020). To reverse this “vicious cycle of neglect of temporal effects in substantive, conceptual, and methodological domains” (Kelly & McGrath, 1988, p. 86), a growing number of researchers have identified temporal issues as a critical agenda item for organizational research (Delisle, 2019; Mohammed, Hamilton, & Lim, 2009; Shipp & Jansen, 2020). Addressing these calls, we study the two important temporal concepts of polychronicity, an individual’s preference for focusing on multiple tasks at a time (Bluedorn & Denhardt, 1988), and pacing style, the way in which an individual distributes their efforts in relation to deadlines (Gevers et al., 2006). We investigate how a match between employee and supervisor polychronicity and pacing styles is perceived by individuals, and how individuals relate that temporal fit to work outcomes. Further, we investigate how individuals react when a low temporal fit is observed.

The theory of time congruence (Kaufman et al., 1991) suggests that a fit between an individual’s temporal preferences and their organization’s and supervisor’s temporal preferences shapes their behaviors and attitudes at work. There are two key factors at play that will be discussed in this paper: the degree to which an individual and their supervisor

have the same preferences in terms of focusing on multiple tasks simultaneously is referred to as individual-supervisor polychronicity; while the degree to which an individual and their supervisor have the same patterns of distribution of effort over time when working toward deadlines is referred to as the individual-supervisor pacing styles fit (Oh, Shin, & Kim, 2019). High temporal fit is experienced when employee and supervisor temporal preferences are aligned, and low temporal fit is the misalignment of employee and supervisor temporal preferences (Kaufman et al., 1991). High temporal fit is critical for organizations because it can enhance individual performance outcomes by balancing multiple team performance requirements such as speed, quality, and short- and long-term demands (Eisenhardt, 2004; Kaufman et al., 1991; Oh et al., 2019). Low individual-supervisor temporal fit can create ambiguity and conflicts about pacing and scheduling that can hinder both timeliness and output quality (Hecht & Allen, 2005; McGrath & Kelly, 1986). However, the temporal fit literature is limited in two ways: first, focusing on calculating fit quantitatively overlooks how high or low temporal fit is perceived; and second, measuring temporal fit at a single point in time overlooks the dynamic and time-dependent nature of fit (Jansen & Shipp, 2018). It is important to address these issues to improve our theoretical understanding and help supervisors to manage their workforce efficiently and effectively.

The theory of work adjustment (TWA) is one theoretical lens for viewing the dynamic nature of organizational temporal fit. This theory says that fit evolves and is shaped through continuous interaction between individuals and their environments. Individuals try to adjust any inconsistencies that they observe in the degree of fit, and individuals who succeed in adjusting low fit tend to perform better and stay longer in organizations compared to individuals who fail to adjust (Dawis et al., 1968). Although TWA is used effectively in the careers and career counselling literature, its use in temporal research is limited. By

integrating TWA into the temporal literature, we expand our understanding and help supervisors to manage temporal issues more efficiently and effectively.

In this study we address two research questions. First, how is perceived temporal fit related to individuals' work outcomes? And second, how do individuals react to low temporal fit? We conducted semi-structured interviews with 55 project professionals from the IT sector in Pakistan to address these questions. We studied how they perceive supervisor polychronicity and pacing styles fit and how they adjust their temporal resources when they observe low temporal fit with their supervisors.

This study advances theoretical and methodological research on organizational temporal issues in two ways: first, by revealing how individuals perceive high temporal fit and how low fit is adjusted; and second, our results inform managers about temporal issues in organizations and provide practical recommendations on how to manage temporal issues effectively. We discuss the implications of the findings and provide an agenda for future research. We begin by reviewing the literature around polychronicity and pacing styles before presenting the theory of time congruence and TWA.

Polychronicity

Polychronicity reflects the extent to which individuals prefer to be involved concurrently in more than one task and believe that their preference is the best way of completing tasks (Bluedorn, 2002; Bluedorn & Denhardt, 1988; Souitaris & Maestro, 2010). Conversely, monochronicity relates to individuals preferring to engage in one task at a time and believing that this is the best way of completing tasks (Bluedorn et al., 1992). Individuals vary significantly from each other in terms of their monochronic or polychronic preferences (Bluedorn, 2002; Bluedorn et al., 1992). Those preferring to focus on multiple concurrent tasks are termed polychrons and those preferring to focus on a single task are termed monochrons (Bluedorn et al., 1992).

The relationships between polychronicity and individual characteristics, outcomes, and task performance have been studied. Polychronicity is positively related to educational level and weekly working hours. In terms of personality dimensions, agreeableness, neuroticism, and openness are not related to polychronicity while conscientiousness is negatively related and extraversion is positively related to polychronicity (Conte & Gintoft, 2005; König et al., 2005). As to beneficial outcomes, polychronicity is positively related to flexibility, information retention (Hall, 1983), and job satisfaction (Jang & George, 2012), and negatively related to role overload (Kaufman, Lane, & Lindquist, 1991). When it comes to detrimental outcomes, polychronicity is positively related to perceptions of frustration and confusion in the workplace (Cotte & Ratneshwar, 1999). Studies on the influence of polychronicity on an individual's task performance have been inconclusive (Conte & Gintoft, 2005; Conte & Jacobs, 2003), but it has been argued that the relationship between polychronicity and task performance is influenced by the nature of the work, such that the relationship is positive when the work environment requires individuals to perform multiple tasks simultaneously (König & Waller, 2010).

Organizations hold norms for time use, task completion, and engaging in multiple tasks (Mattarelli, Bertolotti, & Incerti, 2015). Like individuals, organizations have temporal preferences in terms of time-related requirements and rhythms, and vary in their norms for performing one or multiple activities at a time (Bluedorn, 1991; Kaufman et al., 1991). Organizations enforce these norms through their agents, for instance, supervisors and managers. Organizations that encourage their members to engage in multiple tasks and roles at the same time are referred to as polychronic organizations, while those encouraging one activity at a time are referred to as monochronic organizations (Ashforth, Kreiner, & Fugate, 2000; Gobbo & Vaccari, 2008).

Considering the two perspectives together, organizational polychronicity interacts with individual polychronicity to shape the attitudes and behaviors of individuals at work. Individuals strive to create a fit between their own and organizational polychronicity (König & Waller, 2010). Individual-organizational (I-O) polychronicity fit is associated with organizational commitment, individuals' perceived performance evaluation by their supervisors and co-workers, and the perceived fairness of their performance evaluation (Slocombe & Bluedorn, 1999). Low I-O polychronicity fit is associated with reduced satisfaction and poor wellbeing (Hecht & Allen, 2005). Although high I-O polychronicity fit has been associated with positive outcomes, and low fit with negative outcomes, it is unclear how individuals perceive and interpret I-O polychronicity fit, or how they perceive and manage a low fit. Because supervisors act as agents to enforce organizational preferences and requirements around polychronicity, in this study we examine how individual-supervisor polychronicity fit is interpreted and how individuals manage a low fit over time.

Pacing style

Pacing styles represent how individuals temporally distribute efforts and dedicate time to activities to meet a deadline (Blount & Janicik, 2002). Five linear pacing styles have been established: early action; steady action; deadline action; and two in-between styles (Gevers et al., 2009; Gevers et al., 2006). Early action pacing style is a tendency to start working on activities early and to finish before the deadline by doing the majority of work away from the deadline (Gevers et al., 2009); steady action pacing style is a tendency to work uniformly towards a deadline by working regularly (Gevers et al., 2006); and a deadline action pacing style is a tendency to start exerting efforts late and closer to the deadline (Gevers et al., 2006).

Aside from the linear styles such as the early, steady, and deadline pacing styles (Gevers et al., 2015), there are also non-linear styles, such as the U-shaped action style, where more efforts are dedicated in the beginning and near the deadline, and its opposite, the

inverted-U-shaped action style, where most efforts are made in the middle of the task. Steady, deadline, and U-shaped action styles are the most common pacing styles (Gevers et al., 2009).

Pacing styles are used to predict individual and organizational phenomena. For instance, early action pacing style is positively related to self-efficacy, perception of time control (Claessens et al., 2004), and team performance (Mohammed & Harrison, 2013). Individuals who use early and steady action pacing styles tend to perform activities in a planned way, avoid procrastination, employ time-management mechanisms, and show high risk aversion (Claessens et al., 2004; Gevers et al., 2009; Gevers et al., 2015). Those who use steady action pacing style sustain high levels of professional self-efficacy (Claessens et al., 2004). In contrast, those who use deadline action pacing style tend to procrastinate, use fewer time-management procedures, and have a higher risk tolerance and greater optimism about meeting deadlines (Gevers & Demerouti, 2013; Gevers et al., 2015).

Pacing style research has tended to focus more on temporal diversity in teams and the influence of this on team-related outcomes (Mohammed & Harrison, 2013; Mohammed & Nadkarni, 2011), rather than on the fit between individual and supervisor pacing styles. Diversity studies in this domain have considered the dispersion of styles in groups, its influence on team performance, and the role of temporal leadership in these relationships (Mohammed & Nadkarni, 2011). Initial research on pacing styles fit associates high fit with increased performance and extra-role behaviors (Oh et al., 2019), but our knowledge of how individuals interpret high individual-supervisor (I-S) fit and how individuals react to low I-S fit remains limited. Understanding how individuals interpret and perceive high and low fit is important for theoretical sophistication and managing employees effectively.

The theory of time congruence

The theory of time congruence (Kaufman et al., 1991) posits that individuals have temporal personalities based on their preferences around how they think about and use time. Organizations also have temporal personalities based on their actors' preferences and requirements about how they use time and approach deadlines. Kaufman and colleagues argue that individuals have positive attitudes and work outcomes when their temporal personalities match their organizations' temporal personalities. When there is congruence between an individual's temporal requirements and those of their organization, "a fit is thought to exist, potentially leading to satisfactory performance, and enhancement of quality of work and general life" (Kaufman et al., 1991, p. 79). Individuals tend to stay in organizations longer when there is congruence between their own and their organization's temporal requirements.

Time congruence theory explicitly positions polychronicity as a dimension of individual and organizational temporal personality, but does not refer to pacing styles explicitly as a dimension of temporal personality (Kaufman et al., 1991). However, the initial conceptualization of, and early research on, pacing styles does treat them as stable temporal traits rather than states (Gevers et al., 2006; Shipp & Cole, 2015). Similarly, recent studies on pacing styles have found that projects and organizations also have stable pacing requirements (Oh et al., 2019). Positive or negative work experiences are seen as depending on the level of congruence between individuals' pacing style and the project's temporal characteristics (Gevers et al., 2015). Thus, the theory of time congruence and recent temporal fit literature treat fit as a static phenomenon, which risks limiting our understanding of the dynamic nature of fit. Because the theory of time congruence does not address the dynamic and time-dependent nature of fit, we incorporate into our study the theory of work adjustment (Dawis et al., 1968), which explicitly refers to the dynamic nature of fit.

The theory of work adjustment

The theory of work adjustment (Dawis et al., 1968) describes the relationship between an individual and their work environment. TWA postulates that work is conceptualized as an interaction between an individual and a work environment, where the work environment requires certain tasks to be performed, and the individual brings skills to perform those tasks (Dawis & Lofquist, 1984). Dawis and colleagues argued that individuals and their work environment must continue to meet each other's requirements to maintain the interaction. Work adjustment is required when there is a discrepancy on the part of either the individual or the work environment, and is the process of achieving and maintaining optimal correspondence between an individual's skills and values and organizational requirements. An optimal correspondence between an individual and their organization's work environment is shown by the individual's satisfaction with the environment, resulting in tenure, the principal indicator of work adjustment (Dawis et al., 1968). Tenure and other positive work outcomes can be predicted from the optimal correspondence of an individual's work personality with the work environment (Dawis & Lofquist, 1984). TWA further postulates that individuals and work environments constantly and continuously adjust each other's preferences and requirements to establish optimal correspondence. To maintain optimal correspondence, individuals either adapt to the work requirement or mould the requirements to fit their preferences. Continuous adjustment at both individual and organizational levels can potentially explain how individuals adjust when low temporal fit is observed.

We use the principal tenets of time congruence theory and incorporate the adjustment mechanism from TWA to address the main research questions of this study: how do individuals perceive a high or low temporal fit and relate it to work outcomes?; and how do individuals react to a low temporal fit?

Research context

The context of the study was information technology (IT) firms working on different software development projects. Software development projects are strongly influenced by time through daily deadlines, movement between temporary projects, changing work teams, and changing task priorities. Software development projects are an ideal context for this study as software development projects are time-bound organizations (Burke & Morley, 2016), having specific deadlines and time-use-related requirements (Bakker, 2010).

METHODS

Semi-structured interviews were conducted with 55 professionals from IT firms in Pakistan. At a large nationwide IT expo in Pakistan, professionals from IT organizations were invited to participate in the research. The invitation flyer contained a brief overview of the project and contact details for the researchers, and those interested in participating emailed the researchers. In response, participants received an email that contained an overview of the research and a discussion of the ethical aspects, confidentiality, and the voluntary nature of participation. After each interview, interviewees were asked to suggest further participants who were then formally invited by email. Convenience and snowball sampling were used to target those individuals most aligned with our sample requirements.

All interviews were conducted in English, which is one of the two official languages in Pakistan. In temporal research, particularly in polychronicity and time pacing fit research, the use of semi-structured interviews is not widespread, although they are one of the most dominant and widely used methods of data collection in the social sciences (Bradford & Cullen, 2013). Semi-structured interviews were appropriate for this investigation because they give new insights into social phenomena as they allow interviewees to reflect on and think about a variety of subjects in a different way (Creswell, 1998; Miles & Huberman, 1994), and allow researchers to explore subjective viewpoints (Flick, 2014) and to gather in-

depth accounts of people's experiences. Because we were interested in knowing how individuals interpret and perceive temporal fit and to uncover the complex mechanisms of temporal adjustment, semi-structured interviews were deemed suitable. Semi-structured interviews helped uncover the explanatory mechanisms between fit and outcomes, rather than just linking fit to the outcomes.

An interview schedule of open-ended questions was developed (Choak, 2013), guided by the polychronicity (Bluedorn et al., 1999; Bluedorn et al., 1992) and pacing styles literatures (Gevers et al., 2015; Gevers et al., 2006). Interviews opened with broad questions, such as 'How do you use your time when you are at work?' and 'How do you approach work deadlines?'. Responses to these broad questions indicated the general polychronic orientation and pacing style of the interviewee. We then asked specific questions, such as 'How do you prefer to complete your work? Do you prefer to work sequentially, one task after another, or do you prefer to work simultaneously on multiple different things?'. These probing questions further clarified interviewees' polychronic preferences. In cases where it was difficult to judge an interviewee's polychronic preferences from their responses, we asked the individual to complete a short survey containing four polychronicity items (Bluedorn et al., 1992) to assess their polychronic orientation. Once their polychronic preferences were evident, we asked interviewees about the general polychronic requirements of their supervisors. Having established the individual's and the supervisor's polychronicity, we asked about how the interviewee's polychronic preferences interacted with their supervisor's polychronic preferences.

When an interviewee's pacing style was not clear, they were presented with pacing style graphs and were asked to select the graph that best represented their pacing style; graphs for early, moderate early, steady, moderate deadline, or deadline action styles were taken from Gevers et al. (2006), while graphs for other pacing styles, such as U-shaped or inverted-

U-shaped, were adapted from Gevers et al. (2015). The same process was repeated, with slight wording changes, to assess the pacing styles of immediate supervisors. Presenting time pacing graphs was beneficial for detailed discussion, as it helped keep the discussion focused on pacing style and avoided discussing general working styles. The graphs also helped in assessing adjustments to pacing styles, interviewees talked about how they preferred to approach deadlines and how they were approaching deadlines in their current project. Both pacing styles graphs and the polychronicity short measure helped to keep discussions focused. After discussing the graphs and polychronicity short measure, interviewees were able to reflect on their experiences and started to present examples. Table 1 presents interviewee demographics. Pseudonyms (e.g., P1) are used to conceal the identities of the interviewees.

Table 1. Demographic information

| Pseudonym | Age | Sex | Education Level | Polychronicity | Pacing Style |
|----------------|-----|-----|-----------------|----------------|-------------------|
| Participant 1 | 39 | M | Postgraduate | Monochron | Early Action |
| Participant 2 | 35 | M | Undergraduate | Monochron | Early Action |
| Participant 3 | 45 | M | Undergraduate | Polychron | Early Action |
| Participant 4 | 49 | M | Undergraduate | Monochron | U-Shaped Action |
| Participant 5 | 47 | M | Postgraduate | Monochron | Early Action |
| Participant 6 | 34 | M | Undergraduate | Monochron | Deadline Action |
| Participant 7 | 30 | F | Postgraduate | Polychron | Deadline Action |
| Participant 8 | 37 | M | Postgraduate | Monochron | Steady Action |
| Participant 9 | 44 | M | Undergraduate | Monochron | Early Action |
| Participant 10 | 41 | M | Undergraduate | Monochron | Early Action |
| Participant 11 | 33 | M | Undergraduate | Monochron | Early Action |
| Participant 12 | 46 | M | Postgraduate | Monochron | Early Action |
| Participant 13 | 42 | M | Postgraduate | Monochron | Early Action |
| Participant 14 | 36 | M | Postgraduate | Monochron | Steady Action |
| Participant 15 | 36 | M | Undergraduate | Monochron | Deadline Action |
| Participant 16 | 41 | M | Postgraduate | Monochron | Early Action |
| Participant 17 | 42 | M | Undergraduate | Monochron | Inverted-U Action |
| Participant 18 | 54 | M | Postgraduate | Monochron | Deadline Action |
| Participant 19 | 41 | M | Postgraduate | Polychron | Early Action |
| Participant 20 | 40 | M | Undergraduate | Monochron | Early Action |
| Participant 21 | 37 | M | Postgraduate | Monochron | Early Action |
| Participant 22 | 43 | M | Postgraduate | Monochron | Steady Action |
| Participant 23 | 38 | M | Postgraduate | Polychron | Steady Action |
| Participant 24 | 33 | M | Postgraduate | Polychron | Early Action |
| Participant 25 | 48 | M | Undergraduate | Polychron | Steady Action |
| Participant 26 | 33 | M | Undergraduate | Monochron | Early Action |

Table 1. Demographic information

| Pseudonym | Age | Sex | Education Level | Polychronicity | Pacing Style |
|----------------|-----|-----|-----------------|----------------|-----------------|
| Participant 27 | 44 | M | Postgraduate | Monochron | Early Action |
| Participant 28 | 36 | M | Postgraduate | Polychron | Early Action |
| Participant 29 | 26 | F | Undergraduate | Monochron | U-Shaped Action |
| Participant 30 | 47 | M | Postgraduate | Monochron | Early Action |
| Participant 31 | 33 | M | Postgraduate | Monochron | Early Action |
| Participant 32 | 31 | M | Undergraduate | Monochron | U-Shaped Action |
| Participant 33 | 24 | M | Undergraduate | Monochron | Early Action |
| Participant 34 | 40 | M | Postgraduate | Monochron | Steady Action |
| Participant 35 | 31 | M | Undergraduate | Polychron | Deadline Action |
| Participant 36 | 32 | M | Undergraduate | Monochron | Steady Action |
| Participant 37 | 27 | M | Undergraduate | Monochron | Steady Action |
| Participant 38 | 28 | M | Undergraduate | Polychron | Deadline Action |
| Participant 39 | 37 | M | Postgraduate | Monochron | Early Action |
| Participant 40 | 29 | M | Undergraduate | Monochron | Early Action |
| Participant 41 | 26 | M | Undergraduate | Monochron | Steady Action |
| Participant 42 | 25 | F | Undergraduate | Monochron | Steady Action |
| Participant 43 | 29 | M | Postgraduate | Monochron | Early Action |
| Participant 44 | 27 | M | Postgraduate | Monochron | Early Action |
| Participant 45 | 34 | M | Postgraduate | Polychron | Deadline Action |
| Participant 46 | 27 | M | Postgraduate | Monochron | Deadline Action |
| Participant 47 | 27 | M | Undergraduate | Monochron | Early Action |
| Participant 48 | 28 | M | Undergraduate | Monochron | Deadline Action |
| Participant 49 | 30 | M | Undergraduate | Polychron | Deadline Action |
| Participant 50 | 30 | M | Undergraduate | Monochron | Early Action |
| Participant 51 | 24 | M | Undergraduate | Polychron | Deadline Action |
| Participant 52 | 28 | M | Undergraduate | Polychron | Early Action |
| Participant 53 | 43 | F | Postgraduate | Polychron | Deadline Action |
| Participant 54 | 35 | M | Undergraduate | Monochron | Deadline Action |
| Participant 55 | 31 | M | Undergraduate | Monochron | Deadline Action |

Interviews were conducted over a period of two months and averaged 35 minutes in length. Interviewees included project managers, project team leads, project team members, software developers, software architects, and project quality assurance officers. Interviewees averaged 35.5 years of age and had worked an average of 10 years in IT projects. Four of the 55 interviewees were female. In terms of polychronicity, 14 of the interviewees were polychrons, while the remaining 41 were monochrons; in terms of pacing style, 27 interviewees had an early action style, 14 had a deadline action style, 10 had a steady action style, three had a U-shaped action style, while one had an inverted-U-shaped action style. The diversity in polychronic orientations, pacing styles, and organizational roles helped in addressing the research questions and supported generalizability of the findings.

Data analysis

Interview data was analyzed according to a three-stage procedure, preparing data, coding, and presenting findings (Creswell & Clark, 2018; Miles et al., 2013). In the first stage, audio recorded interviews were transcribed. Data transcription enabled familiarity with and enhanced understanding of the data (Braun & Clarke, 2006). In the second stage, the data were examined and reduced to themes through a coding process using thematic analysis (King, 2004). Thematic analysis provides a structured method for identifying key themes, allowing analysis of a large amount of data from multiple participants to be synthesized into a meaningful account (Boyatzis, 1998). Thematic analysis is a method used for “identifying, analysing, and reporting patterns (themes) within the data” (Braun & Clarke, 2006, p. 79) which is not constrained by a specific epistemological position (Brooks & King, 2016; King, 2004). During the data coding the data, *a priori* themes were used to accelerate the initial coding and to keep the investigation focused (Brooks et al., 2015). These themes were obtained from the same literature from which the interview protocol was derived and refined after analyzing the first seven interviews (Brooks et al., 2015). The template facilitated consistent data analysis and offered the flexibility to further incorporate new themes as the analysis progressed (Brooks & King, 2016). New themes were added when something different was presented by at least 29 interviewees; for instance, temporal adjustment mechanisms were not part of the initial themes. To ensure the rigor of our analysis, a 15-point checklist for thematic analysis was used (Braun & Clarke, 2006).

In the third stage, findings from data are presented. To add rigor and demonstrate the credibility of our findings, we performed an additional step by including excerpts from the interviews to our findings (Lincoln & Guba, 1986).

RESULTS

As described previously, we started the interviews broadly by asking about the individual's and their supervisor's polychronicity and pacing styles. Most interviewees said that polychronicity and time pacing requirements are neither conveyed directly by the organization nor stated in any policy or procedures documents, but that their immediate supervisors tend to enforce such requirements. Interviewees said their organizations have multiple projects and different people manage the different projects, so when it comes to how many tasks an employee should focus on at once (polychronicity) and how to approach the deadline (pacing style), it is the supervisor who enforces these requirements. Different supervisors have their own polychronic preferences and pacing styles and each tends to think their own way is the best way of working and meeting deadlines, so they require their team members to work according to their style:

We do not have set requirements to work according to a particular style, however, working styles and approaches to meet deadlines are enforced by team leaders. My team leader wants me to do everything in the beginning so that we can finish before time. (P23)

In the following sections we discuss high and low temporal fit, then the process of adjustment, followed by the role of leaders in the adjustment process. In the high and low temporal fit sections, we first discuss the pacing styles fit and then polychronicity fit.

High temporal fit

Interviewees told us how they felt and reacted when they experienced either high or low temporal fit. Most associated high supervisor temporal fit with positive attitudes and work outcomes. They said that when they observe a high polychronicity fit with their supervisor, it evokes a feeling of satisfaction, increased focus, and a sense of accomplishment. In cases of high fit on the monochronicity end of the polychronicity

continuum, interviewees said they feel satisfied because they can meet sequential organizational requirements:

It makes me happy when I am asked to concentrate on one task. I feel good because I am able to perform that task effectively, timely, and make no mistakes. (P17)

In cases of high fit on the polychronicity end of the polychronicity continuum, interviewees said they feel satisfied and accomplished:

I feel content and accomplished when I can pull multiple tasks together as required by the team lead. (P3)

When interviewees had a good fit with their supervisor's pacing style, they said they feel satisfied and that their way of completing tasks is welcomed and appreciated by the supervisor. When individuals feel satisfied and have a positive attitude towards their supervisor, they put more energy and enthusiasm into their work:

I feel happy and energized because I can do things the way I want. I enjoy working steadily and without any hustle and my team leader appreciates my style because he also thinks that this is the best approach. It helps me in achieving the deadline with a high-quality product. (P39)

Interviewees stated that another positive outcome of high pacing style fit is permission to work in their best 'performing zone'. They explained that their pacing style is their best way of meeting deadlines, so when they are permitted to work according to their pacing style, they feel confident they will meet the deadline:

I start working on tasks very early, and my supervisor also does the same. I am allowed to work according to my style, and this helps me in meeting the deadline and achieving high-quality output. The simple reason behind is that I am working according to my preferred way. (P43)

Low temporal fit

The majority of interviewees associated a high temporal fit with positive attitudes and outcomes and associated a low fit with negative attitudes and outcomes. In cases of low polychronicity fit, monochrons associated this with feelings of work overload:

I feel overburdened because I have too many things to do in very limited time, I have multiple deadlines to catch, I feel overburdened and exhausted. As a result, I lose my focus as I am at the edge of missing a deadline or even if I do not miss a deadline, I may make mistakes which will be caught by quality assurance. (P2)

Similarly, monochrons associated the low polychronicity fit with the feelings of exhaustion. Requirements of focus on multiple tasks at a time drains monochrons and they feel tired:

Constantly working on multiple tasks at a time is tiring, it consumes your mental resources. (P48)

Like monochrons, the polychrons associated a low polychronicity fit with negative feelings. When polychrons are required to perform one task at a time, they develop negative feelings of boredom and work underload:

My mind works best when I work on multiple activities and projects, switching between different streams make the work exciting. When I am bored because I am not allowed to switch between tasks, I cannot work at my full potential. Boredom is a bad feeling at work and makes you unproductive. (P53)

When there is low pacing styles fit, individuals feel frustrated, which can potentially lead to missing deadlines and producing low-quality outputs:

You cannot go against the nature of someone and ask them to perform well. When you enforce your style on me, you are taking me out of my best performance zone. I will be frustrated because your style is not adding value to my work. I might be able to meet the deadline but at the cost of quality. (P29)

Interviewees associated low pacing styles fit with feelings of anxiety and lack of trust between individuals and their supervisors. They felt their supervisors do not trust their style of approaching the deadline and keep imposing their own pacing style upon them:

I think my supervisor does not trust my way of meeting a deadline and wants me to follow their style of work. This lack of trust interferes with my mood as I feel uneasy at my job. As a result, I am unable to produce quality output. (P13)

Process of adjustment

While discussing interviewees' reactions to low temporal fit, the process of adjustment surfaced. Interviewees explained how they attempt to adjust low temporal fit to avoid the negative feelings associated with it. Most interviewees reported that temporal fit is not a one-time phenomenon, but a process. Interviewees said that because organizations run multiple projects, and individuals have multiple roles in different projects, adjustment and adaptation to multiple temporal rhythms are key to success:

I am usually part of multiple projects in multiple roles, I sometime compromise on how I want to do things. Sometimes others compromise to find symmetry with my approach of work. Compromises are made daily to find a symmetry to execute the project. (P54)

When individuals observe low temporal fit and have consequent negative feelings, the process of adjustment is triggered. Individuals adjust to attain high temporal fit because low fit is associated with the negative feelings:

It is a never-ending cycle I guess, when I am on someone else's project I have to adjust myself according to their ways of managing deadline and performing activities, but when I am in charge I want my team to follow me, if I or someone else is unable to make such compromises, then we cannot perform and we cannot survive in the organization. (P1)

Detailed discussion with interviewees about the adjustment process revealed two types of adjustment: active; and reactive adjustment. In active adjustment, individuals try to change the organizational requirements to accord with their own preferences and abilities to attain higher temporal fit. In reactive adjustment, individuals instead try to mould their own preferences and change their own way of working to align with supervisors' requirements in order to attain high temporal fit.

Adjustment depended on three main factors: the individual's role and position in the project; the degree of low temporal fit; and the nature and complexity of the task. First, interviewees said that if they are leading, or are senior, in the team, they will probably take

the path of active adjustment and try to mould the supervisor's requirements to their own preferences and styles. Otherwise, they will aim for a reactive adjustment and try to mould their own preferences and styles to the requirements:

When I am on a key position in a team, I will work steadily towards the deadline and focus on one activity at a time. But when I am not on a key position I have worked towards the deadlines and on multiple tasks. (P34)

Second, interviewees said that the decision about which adjustment style to choose depends on the degree or magnitude of the low temporal fit. If a monochron is asked to perform a greater number of multiple tasks, then they would use an active adjustment style and do the tasks sequentially; but if they are required to work on only two or three tasks at a time, they may take a reactive adjustment path:

If my supervisor asks me to do for instance seven things at a time, I won't be able to juggle all seven of them and I will do them sequentially. But if it's two or even three tasks then I will try to go out of my comfort zone and do it. (P12)

Third, interviewees said the decision about which adjustment path to choose also depends upon the complexity of the tasks. If the tasks are too complex, then individuals make active adjustments according to their own preference and style. But if the tasks are simple then they might go out of their preferred zone and take the reactive adjustment path:

I would accept a few tasks and try to perform them on time, given the tasks are not too complex. (P11)

Similarly:

If the task is simple, I do not mind working closer to the deadline, but if it is a complex one then I need to work away from the deadline because it requires a lot of concentration. (P21)

Supervisors' role in adjustment

In discussing low temporal fit and adjustment, interviewees raised the role of supervisors in this process. They told us that supervisors play a role at two different stages in both polychronicity and pacing styles fit. First, supervisors play a role in creating a high or

low fit because supervisors assign tasks and duties to individuals and enforce task-related requirements. Supervisors can create a high temporal fit if they consider individual preferences and task requirements. Similarly, supervisors can create a low temporal fit if they do not consider individual preferences and task requirements and allocate tasks randomly:

My supervisor is the one who assigns me work and enforces deadlines. So, my supervisor is the one responsible for creating the stress and issues. (P8)

Second, interviewees said supervisors play a role in a variety of ways during the adjustment process. Supervisors can help the adjustment process by providing support in terms of flexibility when an individual is adjusting:

Supervisors should be flexible in the sense that if they see someone in difficult situations, they should show some flexibility in terms of time so the individual can adjust. Leaders should consider and appreciate the efforts that an employee is making to fulfill the requirements. (P25)

Along with flexibility, supervisors can help in the adjustment process if they assign additional resources, both human and temporal, to individuals:

My supervisor can help me greatly in adjusting to the requirements if they assign another developer to help me or give me an extra hour to complete. (P10)

Or:

My supervisor can provide relief if my supervisor assigns me another activity. (P45)

DISCUSSION

This paper aimed to understand how individuals perceive and interpret temporal fit, and how they react when they experience low temporal fit. The interviews provided insight into the complex mechanisms of high or low temporal fit, the critical process of adjustment, and the role of supervisors. This study confirms previous findings and adds new insights on temporal phenomena in organizations. The study provides evidence about how individuals perceive high and low temporal fit, the potential consequences of high and low temporal fit,

how individuals adjust low temporal fit, and the role a supervisor can play in the adjustment process. These results yield several theoretical and empirical contributions.

Theoretical implications

This research has several theoretical implications. The theory of time congruence (Kaufman et al., 1991) proposes that fit between an individual's temporal personality and the organizational temporal personality yields positive outcomes for organizations, but it does not consider how fit is perceived by individuals. This study found that individuals perceive high temporal fit as a positive factor and associate it with increased job satisfaction and improved relationships with supervisors. Researchers working within the theory of time congruence have tended to link polychronicity fit (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999) and pacing styles fit (Oh et al., 2019) directly to outcome variables without exploring the underlying mechanisms. The results of this study suggest that in cases of high temporal fit, satisfaction is a significant explanatory variable that links polychronicity fit and pacing styles fit to positive outcomes. In cases of low temporal fit, negative feelings like boredom, frustration, exhaustion, and work overload and underload can potentially explain the links between polychronicity fit or pacing styles fit and outcome variables. Additionally, time congruence researchers have tended to link low polychronicity and pacing styles fit to negative outcomes only (Hecht & Allen, 2003; Hecht & Allen, 2005; Oh et al., 2019). Our findings suggest that low polychronicity fit and low pacing styles fit trigger processes of temporal adjustment.

Time congruence research—including time congruence theory, polychronicity fit (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999), and pacing styles fit (Oh et al., 2019)—has treated temporal fit as a static and one-time phenomenon. This study has found that polychronicity fit and pacing styles fit are not static, but process based. The process starts when an individual experience either high or low fit. In case of high fit, employees feel

satisfied and trusted which may contribute to high performance and long tenure. In case of low fit, employees feel bored, frustrated, exhausted, and work overloaded or underloaded which may contribute to low performance and short tenure. This study reveals polychronicity and pacing style fit is achieved through constant adaptation and adoption of preferences and requirements. This finding is in line with the theory of work adjustment (Dawis et al., 1968) and recent theorizations of congruence, where Jansen and Shipp (2018) have argued that congruence is not a static phenomenon but instead is a dynamic and time-dependent phenomenon.

One of this study's most significant theoretical contributions is an elaboration of the adjustment process. When individuals experience low fit and consequent negative feelings, the adjustment process begins. Some individuals adjust their preferences according to the requirements others adjust requirements according to their preferences. Despite research on synchrony preference and temporal flexibility, which argues that some individuals are more temporally adoptable than others (Leroy et al., 2015), previous studies in the literature around both fit and time congruence have not addressed the underlying mechanisms of adjustment processes. Similarly, process of work adjustment is well established in the careers literature, but it is not incorporated to temporal research. This study explicitly attempts to incorporate the elements of work adjustment to temporal congruence.

Although temporal leadership is well established in the temporal diversity literature, its role was not clear in temporal fit and adjustment research. The results of this study suggest that temporal leadership is an essential element in creating high polychronicity and pacing styles fit and in managing the temporal adjustment process. When temporal leaders when aware of the temporal requirements of the job and temporal preferences of their workforce, can create high temporal fit for their employees. In case of limited resources, when a perfect

fit between job requirements and employee temporal preferences cannot be achieved, temporal leaders can help employees in the adjustment process.

Practical implications

This study provides several valuable implications for managing employees effectively and efficiently. First, these results inform human resource (HR) managers and can help in designing initiatives to deal with recruitment and selection processes. HR professionals can analyse the polychronicity and pacing style requirements of jobs and projects, then use the job profile to attract applicants with similar temporal characteristics. Such initiatives would help the organization because they represent a low investment and high return potential (Arndt, Arnold, & Landry, 2006). HR professionals can use validated measures of polychronicity (e.g. Bluedorn et al., 1999; Poposki & Oswald, 2010) and pacing styles (Gevers et al., 2015; Gevers et al., 2006) to create job profiles and assess individual preferences in the recruitment and selection process.

Second, these results can help in managing the current workforce. Employees, managers, and leaders could identify their own individual polychronicity and pacing style preferences, and profiles of current roles and jobs could be prepared. Employee interviews, focus groups, and short assessments can help create individual and job profiles. Based on these profiles, supervisors can then redistribute tasks, transfer individuals to other teams or projects, and reorganize activities to improve match or fit. The intention should be to achieve a high temporal fit to avoid the consequent negative outcomes of low temporal fit.

Third, as it can be difficult to eliminate low temporal fit, supervisors can reduce the negative consequences by helping employees through the process of adjustment. Supervisors could identify individuals experiencing low temporal fit and facilitate the adjustment process in multiple ways such as by allowing extra time, assigning additional resources, assigning an additional activity, or even by just acknowledging the difficulty faced by the individual.

There are several limitations to our study. First, there is the limited generalizability of qualitative inquiries: although this study's qualitative nature provided detailed understanding and helped uncover underlying assumptions and mechanisms (Miles et al., 2013; Saldaña, 2009), future quantitative studies may provide greater generalizability. Second, although we reported explanatory mechanisms like work overload, underload, frustration, anxiety, and exhaustion along with satisfaction between temporal fit and outcome variables, there may be other variables playing a role in these relationships. Third, our study did not explicitly focus on individual's synchrony preference and temporal flexibility, future studies can incorporate these variables to study the process of temporal adjustment. Fourth, the interviews were cross-sectional, even though we were interested in something process based. Finally, our study indicated two main types of adjustment mechanism, but there may be others we did not identify. Having introduced the process of temporal adjustment, we encourage future researchers to explore these mechanisms in further depth.

CONCLUSION

We endeavored to understand how do individuals perceive a high or low temporal fit and relate it to work outcomes?; and how do individuals react to a low temporal fit? Our study of 55 IT professionals revealed that temporal fit is a critical phenomenon in organizations. Our findings integrate the theory of time congruence and the theory of work adjustment to elaborate on the dynamic processes of adjustment when a low individual-supervisor polychronicity fit and pacing styles fit is observed. Our findings integrate the role of leaders in time-related phenomena. We provide practical recommendations for the effective management of temporal phenomena in organizations. By recognizing and responding to the critical daily role of temporal fit, organizations can improve productivity and other important outcomes.

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Conclusion to Study 3

In Study 3, polychronicity and pacing styles—constructs of how individuals ‘use’ time—were studied. Two research questions were addressed: first, examining how individuals perceive a fit between their own and their supervisor’s polychronicity and pacing styles and how they relate this to work outcomes; and second, how individuals react when they experience a low temporal fit. The findings revealed that individuals connect high temporal fit with positive work outcomes and explain this relationship through satisfaction, while they associate low temporal fit with negative work outcomes and explain this relationship through exhaustion, lack of trust, boredom, work overload and underload, and frustration. The findings revealed that low fit triggers temporal adjustment, an individual’s efforts to achieve high temporal fit. The findings further revealed the role of supervisors and their temporal leadership in achieving high temporal fit. The findings of this study contribute to the theoretical understanding of temporal congruence in particular and the understanding of subjective time differences in general.

Study 3 of this thesis guides Study 4, which uses quantitative data to investigate the influence of individual-organizational polychronicity fit on employee turnover intentions.

**Chapter 5. Study 4. Polychronicity fit and turnover intentions in projects: The
mediating roles of exhaustion and work overload**

Introduction to Study 4

Like the previous study, Study 4 of this thesis focuses on how individuals ‘use’ time, the second of the major facets of an individual’s time perspective. The way in which individuals use time is generally conceptualized using the construct of ‘polychronicity’, the extent to which an individual prefers to engage in multiple tasks simultaneously. Study 4 is informed by the findings of Study 1 and Study 3: Study 1 highlighted that a better understanding of the fit between the subjective time ideas of individuals and their organizations can be beneficial for effective management of projects and for theory building; while the results of Study 3 similarly revealed that high temporal fit can be beneficial for individual and organizational outcomes. Following those results, this study examines the influence of individual-organizational polychronicity fit on employee turnover intentions. This study draws from person-environment fit theory and the theory of time congruence, and it uses survey data from 309 respondents who were professionals working in the software development industry in Pakistan. Using polynomial regressions and response surface analysis, this study investigates the relationship between polychronicity fit and turnover intentions of the employee. Exhaustion and perceptions of work overload are used as mediating mechanisms of the relationship between polychronicity fit and turnover intentions. Both fit and misfit scenarios are examined.

This paper has been prepared according to the publication guidelines for the *International Journal of Project Management*.

**Polychronicity Fit and Turnover Intentions in Projects: The Mediating Roles of
Exhaustion and Work Overload**

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ABSTRACT

Despite the deployment of state-of-the-art methodologies for project management, developed via extensive research in the field, employee turnover in projects remains high. Such turnover has significant costs in terms of replacing personnel, potential deadline overruns, and the expenditure of financial resources that could be used for other purposes. One reason for turnover being high in project contexts may relate to issues around time that are associated with multiple parallel projects and short deadlines. Using person-environment fit theory and time congruence theory, this research examines the relationship between employee turnover intentions and individual-organizational (I-O) polychronicity fit, the degree to which there is a match between individuals' and organizational preferences when it comes to focusing on multiple tasks at the same time. It was hypothesized that I-O polychronicity fit will be related to employees' turnover intentions. The mediating roles of exhaustion and perception of work overload were also examined. Hypotheses were tested using polynomial regressions and response surface modeling. The analysis of survey data from 309 software project employees in Pakistan found that I-O polychronicity fit was related to turnover intentions, and that this relationship was significantly explained by exhaustion and the perception of work overload. These findings contribute to the academic literature on effective project management and carry practical implications for retaining valuable project employees.

Keywords

Exhaustion, person-environment fit, misfit, polychronicity, polynomial regression, turnover intentions, work overload

Polychronicity Fit and Turnover Intentions in Projects: The Mediating Roles of Exhaustion and Work Overload

Temporal phenomena such as time management and deadlines are critical for the successful management and execution of projects (Delisle, 2019). The importance of time, and how it is managed and experienced by workers in projects (Bakker et al., 2016; Burke & Morley, 2016; Lundin, 2013), has led to research on how deadlines are set, how time constraints are managed, and how deadlines influence both individual and organizational outcomes (Pinto, 1999; Steyn, 2002). Because effective project management relies on timely delivery and meeting multiple deadlines, the notion of multitasking has become an essential component of project management (Appelbaum & Marchionni, 2008). It has become important for project members to be able to multitask, or do multiple things at one time, particularly in organizations where workers may be working on multiple projects simultaneously (Lechler, Ronen, & Stohr, 2005). Despite its centrality for ensuring project success and the benefits it can generate, multitasking also contributes to negative outcomes, such as delaying the timely completion of projects (Lechler et al., 2005) and causing project underperformance (Pinto, 1999). Constant demands to perform effectively on multiple fronts and to meet multiple competing deadlines can put immense pressure on individuals in projects (Patrick, 1999) and lead to high staff turnover in projects. To overcome the negative impacts of multitasking, methodologies like critical chain management (Leach, 1999) have been introduced to avoid multitasking in projects. But avoiding multitasking may ultimately not be possible in project environments (Pinto, 1999), given the multiple, often competing, tasks that individuals must undertake within given time constraints. Hence, understanding the phenomenon of multitasking requires further research, particularly when it comes to explaining where and why it generates positive or negative outcomes for workers and their associated projects. One way of examining how individuals differentially experience

multitasking is to look at the degree of fit between an individual's and an organization's preferences for focusing on multiple tasks simultaneously.

An individual's preference around performing multiple tasks at one time is known as polychronicity (Bluedorn, 2002; Bluedorn & Denhardt, 1988). Some individuals prefer to focus on a single task, while others prefer to divide their focus among multiple tasks simultaneously (Bluedorn, 2002). Similar to individuals, organizations, through their norms and work environments, demonstrate preferences related to focusing on one or else multiple tasks at a given time; this organizational polychronicity (Kaufman et al., 1991) can be observed by studying organizational work patterns and rhythms. In terms of the fit between individual and organizational polychronicity, the theory of time congruence (Kaufman et al., 1991) suggests that those who prefer to work on one task at a time will be more focused and comfortable in a work environment that affords them the opportunity to do so (Bluedorn et al., 1992), whereas those who prefer to work on multiple tasks simultaneously will find that same work environment to be frustrating and laborious (Cummings & Cooper, 1979). Conversely, working on multiple tasks simultaneously may be difficult and stressful for individuals who prefer to focus on one thing at a time (Bertolotti, Mattarelli, & Dukerich, 2018), whereas such multitasking can be a dynamic and rewarding experience for those who prefer to allocate their time in that manner (Bluedorn et al., 1992).

In this study, we explore how the degree of fit between individual and organizational polychronicity influences the turnover intentions of employees working in a project environment. This research question is an important one, and it may offer a critical explanation of why multitasking, although beneficially deployed by some individuals, can be detrimental to others and ultimately result in employee turnover.

To better understand the experiences that multitasking can generate, we also examine the mechanisms driving the relationship between individual-organizational (I-O)

polychronicity misfit. In addition, we investigate the outcomes of such I-O misfit, particularly exhaustion and perceptions of work overload. According to person-environment fit theory, low fit on any dimension influences individual outcome variables by evoking negative feelings (Edwards, 1991). In the case of polychronicity, low fit between individual and organizational polychronicity will result in negative feelings that will then influence employee turnover intentions. Similarly, the job demand-control model (Karasek, 1979) suggests that increasing demands on an individual's abilities will exhaust them (Pinto, Dawood, & Pinto, 2014), and lead to perceptions of overload (Slevin & Pinto, 1987) in project environments. In sum, we aim to understand what negative experiences multitasking can generate, and to explore their mediating role between polychronicity misfit and outcomes.

This research therefore examines the role of polychronicity at both the individual and organizational levels in projects. Current scholarship does not assess the interaction between these two levels, despite evidence that polychronicity at one level will influence the other (König & Waller, 2010). Originally described as a cultural-level construct (Hall & Hall, 1959), polychronicity has more recently received attention as an individual-level construct (Bluedorn, 1991; Bluedorn & Denhardt, 1988). Although related to important work behaviors, polychronicity has not yet been examined through an interactionist lens (Hecht & Allen, 2005). In particular, the influence of interactions between individual- and organizational-level polychronicity on employee attitudes and behaviors in projects has not been studied. Scholars have, separately, recognized the need to study polychronicity in organizations (Conte & Jacobs, 2003; Hecht & Allen, 2005; Slocombe & Bluedorn, 1999) and person-environment fit on the dimension of polychronicity (Kaufman-Scarborough & Lindquist, 1999; Palmer, 1997). However, the relationship between I-O polychronicity fit and employee turnover intentions has not been examined. Overall, this study addresses two

important questions: What is the relationship between I-O polychronicity fit and turnover intentions?; and, do exhaustion and perceptions of work overload mediate the relationship between I-O polychronicity misfit and turnover intentions?

This research responds to calls for an increased focus on examining how time-related variables impact work outcomes, through a person-environment fit lens (Ancona et al., 2001; de Vasconcellos, 2017; Shipp & Cole, 2015). We also contribute to the growing literature on the antecedents to effective projects and project management. Projects have unique working environments characterized by limited time, non-repetitive activities, and multiple competing goals; these characteristics make the organizational phenomena associated with projects different from those related to the routine work tasks performed by organizations (Burke & Morley, 2016). Employee turnover in projects remains high compared to non-project industries. For example, employee turnover rates in construction 10.1% and information technology, media and telecoms 7.1% were higher than public administration 4.9% and agriculture 3.9% in 2020 (AIGroup, 2020). High employee turnover can be particularly detrimental to project performance because of the time-bound nature of the projects. Thus, for any major shift from routine operations to projects (Bakker et al., 2016; Burke & Morley, 2016), it is important to understand how individual- and organizational-level contexts (here the effects of polychronicity fit) influence the management of multitasking project environments and the retention of project employees.

We now detail the theoretical framework driving this research, considering polychronicity, person-environment fit, and the relationship between the two concepts.

Polychronicity

Polychronicity is conceptualized as a continuum, with monochronicity on one end and polychronicity on the other (Bluedorn et al., 1992). Individuals vary in their preferences for focusing on one task at a time, as opposed to focusing on multiple tasks at once.

Polychronicity thus refers to individuals' preferences for sequencing activities and reflects how individuals prefer to allocate their work time (Souitaris & Maestro, 2010).

Polychronicity reflects the extent to which individuals ("polychrons") prefer to be involved in more than one task simultaneously, and believe that multitasking is generally the best way of performing tasks (Bluedorn, 2002; Bluedorn et al., 1992). In contrast, monochronicity reflects the extent to which individuals ("monochrons") prefer to focus on one task at a time (Bluedorn & Denhardt, 1988). The polychronicity continuum is presented in Figure 1.



Figure 1. Polychronicity Continuum Adapted from Bluedorn et al. (1992)

Polychronicity is typically considered to be a stable, personality-like trait, rather than a variable state (Bluedorn, 2002; de Vasconcellos, 2017; Shipp & Cole, 2015). Polychronicity can be reliably and validly measured at the individual level (Conte, Rizzuto, & Steiner, 1999; Kaufman-Scarborough & Lindquist, 1999). Polychronicity can be differentiated from other time-related variables including punctuality which refers to 'being on time' (Bluedorn & Jaussi, 2007; Conte & Jacobs, 2003), impatience which is an individual's restlessness or irritability (Conte et al., 1999), time tangibility which is the extent to which an individual views time as a resource to be used, saved, scheduled, managed, and ultimately controlled (Palmer & Schoorman, 1999), and preferences for having a schedule (Bluedorn et al., 1999).

Regarding positive work outcomes, polychronicity positively correlates with creativity (Bluedorn, 2000), flexibility with changes in plans, higher information-retention capacity (Hall, 1983), and increased job satisfaction (Jang & George, 2012), and is negatively

correlated to perceptions of role overload (Kaufman et al., 1991). Regarding negative work outcomes, polychronicity has been correlated to absence from work (Conte & Jacobs, 2003) and increased perceptions of frustration and confusion in the workplace (Cotte & Ratneshwar, 1999). However, results regarding the influence of polychronicity on individuals' task performance are mixed (Conte & Gintoft, 2005; Conte & Jacobs, 2003), especially since these relationships might be influenced by the nature of the work in question—such as when the work environment itself requires polychronic behaviors (König & Waller, 2010).

Like individuals, organizations also have norms for focusing on one or else multiple tasks at a time, referred to as organizational polychronicity (Kaufman et al., 1991). Organizations may be polychronic environments, tending to require workers to undertake more than one task simultaneously, or monochronic environments, tending to focus on one task at a time (Bluedorn et al., 1992). Organizational polychronicity can be observed in the work environment by studying organizational work patterns and rhythms. Organizations having polychronic environments tend to initiate multiple projects in parallel, assign teams to more than one project to execute non-routine tasks, and direct their attention to events and elements in their general working environments, as opposed to maintaining a strictly intra-organizational focus (Bluedorn, 1991). Conversely, organizations having monochronic environments tend to initiate one project at a time, have dedicated teams that perform routine tasks, and focus on activities within their organizational boundaries (Bluedorn, 1991). Further, organizational polychronicity interacts with individual polychronicity and influences outcomes at both levels (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999).

Person-environment fit

Person-environment fit refers to the level of compatibility an individual has with his or her work environment (Kristof, 1996). Person-environment fit is generally classified into

two categories with a distinction between demands-abilities (D-A) and supplies-values (S-V) fit (Edwards, 1996; Kristof, 1996): D-A fit refers to whether an individual has the knowledge, skills, and abilities necessary to perform the tasks demanded of their job (Kristof, 1996); while S-V fit refers to whether the job supplies the opportunities to fulfill the individual's needs, values, and preferences (Kristof, 1996). The present study focuses on S-V fit because, at the individual level, we are focusing on individuals' *preferences* for completing multiple tasks, rather than their *abilities* to perform multiple tasks. Similarly, at the organizational level we focus on organizational *supplies*, which are the opportunities the organization provides for employees to focus on multiple tasks, rather than on organizational *demands* that employees perform multiple tasks. Where there is polychronicity S-V fit, person-environment fit is high when the opportunity to focus on multiple tasks simultaneously matches an individual's preference for working in that fashion (Hecht & Allen, 2005). At the extremes, I-O polychronicity fit might occur either as "monochronicity fit" when an individual prefers to focus on single tasks and the job environment provides opportunities for doing so, or "polychronicity fit" when an individual prefers to focus on multiple tasks simultaneously and the job environment provides opportunities for doing so. Because polychronicity is a continuum (Bluedorn et al., 1999; Conte et al., 1999), a high level of fit can also occur at any point between these extremes (Hecht & Allen, 2005).

Contrary to the scenarios involving fit, high person-environment misfit exists when the opportunity to focus on multiple tasks simultaneously is misaligned with an individual's preferences (Hecht & Allen, 2005). An employee can have insufficient supplies when the work environment offers less polychronic work than desired, or they can have excess supplies when the work environment offers more polychronic work than desired. Here, it is important to distinguish between misfit involving insufficient supplies and misfit involving excess supplies, because they may evoke different reactions (Hecht & Allen, 2005). Insufficient

supplies are generally associated with poorer outcomes, because they are a direct cause of negative psychological reactions (Dawis & Lofquist, 1984; Kristof, 1996). Excess supplies, by contrast, may or may not cause negative psychological reactions (Edwards, 1996). For instance, excess supplies can be associated, on one hand, with positive psychological reactions when they facilitate the fulfillment of preferences on another dimension (the “carryover” scenario) or when they can be conserved, such that individuals can fulfill their preferences for a focal dimension later (the “conservation” scenario) (Edwards, 1991; Edwards & Cable, 2009). On the other hand, excess supplies can also be associated with negative psychological reactions, when they deplete the resources needed to fulfill one’s preferences for a focal dimension at a later time (the “depletion” scenario), or interfere with the fulfillment of preferences on another dimension (the “interference” scenario) (Dawis & Lofquist, 1984; Edwards, 1991; Kristof-Brown et al., 2005). The nature of the relationship between excess supplies and outcomes depends on the extent to which the four processes of conservation, carryover, depletion, and interference come into play in a given instance (Edwards, 1996).

Polychronicity and person-environment fit

The link between polychronicity fit and workplace outcomes is rooted in the theory of time congruence (Kaufman et al., 1991). This theory suggests that individuals can experience “temporal symmetry” if their generally preferred rhythm of work fits with the actual rhythm of their work. The theory of time congruence proposes that individuals experience high levels of intrinsic satisfaction, wellness, quality of life, and motivation when their experienced and preferred “time personalities” have a higher level of fit with one another; and increased temporal symmetry can lead to lower employee turnover (Kaufman et al., 1991). This idea of polychronicity fit is consistent with the observation that monochrons in a polychronic

environment, and polychrons in a monochronic environment, have equal difficulty in dealing with their situations (Hall, 1983).

Taken together, S-V fit (Kristof-Brown et al., 2005) and the theory of time congruence (Kaufman et al., 1991) suggest that individuals will react negatively when polychronicity supplies do not satisfy polychronicity values. Negative psychological reactions may be in the form of high employee turnover intentions, or an employee's willingness to leave the organization (Guimaraes, 1997). Turnover intentions are linked to actual employee turnover, which is detrimental to project success given that it can lead to both cost and schedule overruns. Hence, we hypothesize that:

H1: I-O polychronicity fit (misfit) is related to low (high) employee turnover intentions.

The four processes described earlier—carryover, conservation, depletion, and interference—can be used to make predictions about what will happen when polychronicity supplies exceed individual preferences. In the case of polychronicity, excess supplies are unlikely to be carried over to other dimensions and they are not a resource that can be saved for use at a later time; thus, the positive effects of carryover and conservation are unlikely (Hecht & Allen, 2005). Similarly, a current excess of polychronicity supplies is unlikely to result in a deficiency of polychronicity supplies in the future. However, with respect to depletion, high polychronicity supplies are a signal to the individual that he or she has a high level of responsibility, which might require additional work to fulfill. If so, excess polychronicity supplies might require the individual to work constantly at an increased capacity, leading to depleted resources and exhaustion. Exhaustion is a state of physiological and psychological depletion, which goes along with stress reactions such as psychosomatic complaints (Bakker et al., 2003). Exhausted employees often feel unwell during work, question the meaning or purpose of their job, and are likely to have higher turnover intentions

(Bakker, Demerouti, & Schaufeli, 2003; Moore, 2000). We expect excess polychronicity supplies will exhaust the individual and, in turn, increase turnover intentions. Hence, we hypothesize that:

H2: Perceptions of exhaustion mediate the relationship between I-O polychronicity fit and turnover intentions.

Another consequence of excess polychronicity supplies is a perception of work overload. Work overload can be defined as an incompatibility between role requirements and an individual's ability to fulfill those requirements, leading to the individual's falling short of the requirements in question (Conley & Woosley, 2000). Limited time to perform multiple tasks in organizations is one of the major causes of employees' perceptions of work overload (Newton & Keenan, 1987). This perception of work overload is, in turn, a source of stress for individuals, and leads to increased turnover intentions (Rahim, 1992). In our case, excess polychronicity supplies are associated with the feeling of doing less and producing poor quality work (Hecht & Allen, 2005). In this scenario, excess polychronicity supplies may interfere with an individual's ability to fulfil his or her needs on other dimensions, such as desires for higher performance, causing the employee to feel unable to perform at the required level. Excess supplies will be associated with perceptions of work overload that may lead to higher turnover intentions. Hence, we hypothesize that:

H3: The perception of work overload mediates the relationship between I-O polychronicity fit and turnover intentions.

To address the research questions and test the hypothesized relationships, a survey study was conducted in a heavily project-based information technology organization. We now detail the context and procedure of the study.

METHODS

Research context

Software development projects are time-bound organizational forms (Burke & Morley, 2016), having specific deadlines and time-use-related requirements (Bakker, 2010); these projects also often have high employee turnover. The working environment of software development projects is influenced by time through daily deadlines, movement between temporary projects, changing work teams, and changing task priorities. Employees work on different aspects of projects such as planning, development, bug testing, and quality assurance. Most employees are part of multiple projects and can serve in different temporary positions in those multiple projects; for example, one employee may be a software developer on one project and a quality assurer or bug tester on another. Multiple roles and deadlines for different projects provide ample opportunities for employees to work simultaneously on multiple tasks. The nature of such environments places specific requirements on employees regarding how they approach deadlines and how they use their time while working, making this research context ideal for the present study.

Procedure

Employee surveys were used to gather data on the focal variables. The researchers explained the purpose and practical implications of the study to the managing director and global human resources team of a multinational software development organization with over 1,500 employees in seven countries. Organizational representatives signed a consent agreement allowing us to survey their employees in Pakistan, where most of their software development teams are located. After approval from global management and the university's ethics committee, we worked with local managers to distribute the surveys. Completion of the survey was considered informed consent.

An invitation to participate in the online survey was emailed to 100 randomly selected employees. Technical difficulties with accessing the survey from the intranet then prompted conversion to a paper survey, which was distributed to a further 500 randomly selected employees. The survey was distributed in two different settings. In one setting, employees in a training room were invited by a researcher to complete the survey. In the second setting, surveys were delivered to workstations, and completed surveys were collected from a secure dropbox in a central location. The combined response rate was 56.6%, with 58 online and 282 paper surveys. Respondents included project managers, project team leads, software developers, software architects, software quality assurers, accountants, and quality assurance officers.

Polynomial regressions procedure and data preparation

To assess the hypothesized effect of I-O polychronicity fit on employee turnover intentions, we performed a polynomial regression analysis (Edwards, 1993; Shanock et al., 2010) with SPSS version 25, combined with response surface modeling in Microsoft Excel (Shanock et al., 2010). Polynomial regressions and response surface modeling were used to test the hypotheses in order to avoid the methodological problems associated with difference scores, including decreased reliability, decreased validity, and pseudo-correlation (Johns, 1981). To test the influence of I-O polychronicity fit on turnover intentions, we first regressed the dependent variable, turnover intention, on the control variables of age, tenure, and gender. We then regressed the dependent variable on five polynomial terms: individual polychronicity (Poly), organizational polychronicity (OrgPoly), individual polychronicity squared (Poly²), organizational polychronicity squared (OrgPoly²), and individual polychronicity multiplied by organizational polychronicity (Poly*OrgPoly). The main regression model we used to test H1 is:

$$\text{Turnover intentions} = \beta_0 + \beta_1 \text{Poly} + \beta_2 \text{OrgPoly} + \beta_3 \text{Poly}^2 + \beta_4 \text{Poly} * \text{OrgPoly} + \beta_5 \text{OrgPoly}^2$$

Following the polynomial regression procedure, rather than directly interpreting the results from the polynomial regression analysis, we used the coefficients from the analysis to examine response surface patterns (Edwards, 1994; Harris, Anseel, & Lievens, 2008), which we graphed as a three-dimensional visual representation to aid interpretation (Shanock et al., 2010). In the response surface analysis, the slope and curvature of two lines represent the response surface pattern (Atwater et al., 1998). The slope of the line of fit α_1 , when individual polychronicity is equal to organizational polychronicity, is tested by adding the unstandardized coefficient for individual polychronicity and the unstandardized coefficient for organizational polychronicity. The curvature of the line of fit α_2 is tested by adding the unstandardized coefficient for the squared term of individual polychronicity, the unstandardized coefficient for the multiplicative term of individual and organizational polychronicity, and the unstandardized coefficient for the squared term of organizational polychronicity. Meanwhile, the slope of the line of misfit α_3 , where individual polychronicity is not equal to organizational polychronicity, is tested by subtracting the unstandardized coefficient for organizational polychronicity from the unstandardized coefficient for individual polychronicity. Finally, the curvature of the line of misfit α_4 is tested by first subtracting the unstandardized coefficient for the multiplicative term of individual polychronicity and organizational polychronicity from the unstandardized coefficient for the squared term of individual polychronicity, and then adding the unstandardized coefficient for the squared term of organizational polychronicity.

Mediation test using the block variable approach

To test the mediation hypotheses, H2 and H3, we examined the indirect effects of I-O polychronicity fit on employees' turnover intentions via exhaustion and the perception of work overload, respectively. First, we created a block variable by a weighted linear composite of estimate coefficients "that constitutes the block, in which the weights are the

estimated regression coefficients for the variables in the block” (Edwards & Cable, 2009, p. 660). The block variable in our study was calculated by adding the five quadratic terms in our main regression model, excluding β_0 .

$$\beta_1 Poly + \beta_2 OrgPoly + \beta_3 Poly^2 + \beta_4 Poly * OrgPoly + \beta_5 OrgPoly^2$$

The block variable represented the joint effect of both the fit and misfit effect of the five terms. Using the block variable does not change the estimated coefficients for other variables in the equation or the total explained variance (Heise, 1972; Igra, 1979). After calculating the block variable, we ran the mediation model using the SPSS Process macro (Hayes, 2017).

Measures

Both online and paper versions of the survey were in English, one of the two official languages of Pakistan and the language used in organizational communications. The complete survey is presented in Appendix C.

Individual polychronicity

This was measured using the 10-item scale known as the “inventory of polychronic values” (Bluedorn et al., 1999). A sample item was: “I like to juggle several activities at the same time.” Respondents rated these items on a seven-point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree. Cronbach’s alpha was 0.81.

Organizational polychronicity

This was measured using a 10-item polychronicity supplies scale (Hecht & Allen, 2005). A sample item was: “It is typical of this job to have many tasks to complete.” Respondents rated these items on a seven-point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree. Cronbach’s alpha was 0.76.

Turnover intentions

This was measured using a four-item turnover intentions scale (Kelloway, Gottlieb, & Barham, 1999). A sample item was: “I am thinking about leaving this organization.” Respondents rated these items on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Cronbach’s alpha was 0.91.

Work overload

This was measured using a 13-item work overload scale (Reilly, 1982). A sample item was: “I have to do things which I don’t really have the time and energy for.” Respondents rated these items on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Cronbach’s alpha was 0.89.

Exhaustion

This was measured using the five-item exhaustion subscale in the Maslach burnout inventory (Maslach et al., 1986). A sample item was: “I feel emotionally drained from my work.” Respondents rated these items on a seven-point Likert scale ranging from 1 = never to 7 = always. Cronbach’s alpha for the exhaustion subscale was 0.91.

Control variables

Participants’ age, gender, and organizational tenure were captured.

RESULTS

Before data analysis, 31 responses with more than 15% missing data were removed (Hair et al., 2016). Box plots showed that no outliers required removal (Hair, 2014; Sarstedt & Mooi, 2014) and so a total of 309 responses were analyzed. To check for common method bias, Harman’s single factor score was calculated. The score confirmed that our data were not affected by common method bias, because the total variance for a single factor was 21.6%, demonstrating that the majority of variance did not load to a single factor (Podsakoff et al., 2003).

Respondents had an average age of 32 years, an average organizational tenure of five years, and 78% of them were male. Descriptive statistics, correlations, and reliability coefficients are presented in Table 1.

Table 1. Descriptive statistics and correlations

| Variables | Mean | SD | 1 | 2 | 3 | 4 | 5 |
|------------------------|------|------|--------|--------|--------|--------|-------|
| Tenure | 4.99 | 3.65 | | | | | |
| Age (in years) | 31.9 | 5.71 | | | | | |
| 1. Individual poly | 4.01 | 1.03 | (.80) | | | | |
| 2. Org poly | 4.37 | .91 | .273** | (.75) | | | |
| 3. Work overload | 2.88 | .75 | .137* | .282** | (.89) | | |
| 4. Exhaustion | 3.37 | 1.43 | .027 | .116* | .625** | (.91) | |
| 5. Turnover intentions | 2.66 | 1.05 | -.016 | .159** | .410** | .494** | (.90) |

Notes. * = correlations are significant at 0.05 level; ** = correlations are significant at 0.01

level. Cronbach's alphas are displayed along the diagonal, in brackets.

All the variables are significantly correlated in the hypothesized directions, except for (1) individual polychronicity and exhaustion and (2) individual polychronicity and turnover intentions. These nonsignificant relationships are not problematic for our hypothesis testing, because we are not examining the direct linear relationships between individual polychronicity and exhaustion, nor between individual polychronicity and turnover intentions.

To reduce multicollinearity (Edwards & Cable, 2009; Edwards & Parry, 1993; Shanock et al., 2010), we scale-centered both lower-order terms, i.e., individual polychronicity and organizational polychronicity, before calculating higher-order terms. Before running polynomial regressions, we established their appropriateness by assessing the discrepancy in both independent variables. We found there was at least 10% discrepancy in the independent variables (see Table 2), meeting the threshold value required for running polynomial regressions (Shanock et al., 2010).

Table 2. Discrepancy analysis: Individual-organizational polychronicity

| Difference groups (Poly-OrgPoly) | Frequency (N) | Percentage (%) | Cumulative (%) |
|----------------------------------|---------------|----------------|----------------|
| Less than -0.05 | 109 | 35.3 | 35.3 |
| -0.049 to 0.049 | 92 | 29.8 | 65.0 |
| Above 0.05 | 108 | 35.0 | 100 |
| Total | 309 | 100 | |

For hypothesis 1, we expected a significant relationship between I-O polychronicity fit and turnover intentions. We ran the polynomial regressions both with and without control variables. The inclusion of controls did not influence the main results. We report coefficients without controls in Table 3, while coefficients with controls are presented at the end of this study in Table 5 as additional information.

Table 3. Polynomial regressions and surface plot coefficients

| Variables | Turnover intentions |
|-------------------------------|---------------------|
| Constant | 2.639 (SE = 0.084) |
| Poly | -0.051 (0.066) |
| OrgPoly | 0.278 (0.084) |
| Poly ² | 0.029 (0.041) |
| Poly*OrgPoly | -0.066 (0.065) |
| OrgPoly ² | -0.099 (0.056) |
| R ² | 0.048 |
| Fit (Poly = OrgPoly) line | |
| Slope α_1 | 0.23* (0.09) |
| Curvature α_2 | -0.14 (0.08) |
| Misfit (Poly = -OrgPoly) line | |
| Slope α_3 | -0.33* (0.12) |
| Curvature α_4 | 0.00 (0.11) |

Notes. n = 309; * = significant at 0.05 level

Results reveal a coefficient of determination of 0.05, which significantly differs from zero. We inputted the unstandardized beta values for the constant and the five polynomial terms, their respective coefficient of standard errors, and the associated covariances into the surface analysis Excel spreadsheet to generate a three-dimensional graph (Figure 1). Results reveal the slope of the line of agreement or fit (Poly = OrgPoly) was positive and significant ($\alpha_1 = 0.23$, $p < .05$), indicating that I-O polychronicity fit is significantly related to turnover

intentions. H1 is supported. The relationship between I-O polychronicity fit and turnover intentions is such that turnover intentions are low when both individual and organizational polychronicity are low. However, turnover intentions increase as both individual and organizational polychronicity increase. Given that polychronicity is a continuum where the lower end represents monochronicity and the higher end represents polychronicity, the results imply that monochronicity fit is associated with lower turnover intentions. However, fit on the higher end of the polychronicity continuum is associated with higher turnover intentions. In terms of misfit, results reveal that the slope of the line of disagreement or misfit ($\text{Poly} = -\text{OrgPoly}$) was negative and significant ($\alpha_3 = -0.33, p < .05$), indicating that polychronicity misfit is also significantly related to turnover intentions. The relationship between I-O polychronicity misfit and turnover intentions is such that turnover intentions are high when organizational polychronicity exceeds individual polychronicity.

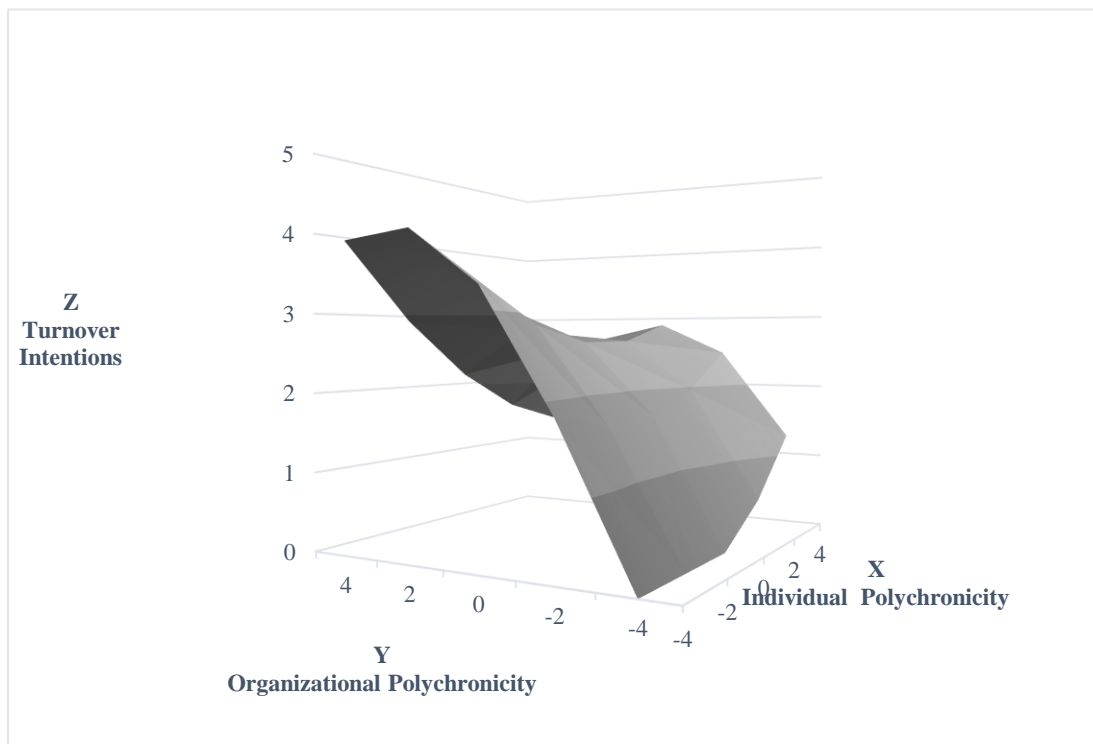


Figure 2. Turnover as predicted by individual-organizational polychronicity fit

For hypothesis 2, we expected exhaustion to mediate the relationship between I-O polychronicity fit and turnover intentions. The block variable method was used to test the

mediation using the Process macro in SPSS. First, the polychronicity block was positively and significantly related to exhaustion (path $a = 0.836$, $SE = 0.35$, $p < 0.05$), while exhaustion was positively associated with turnover intentions (path $b = 0.345$, $SE = 0.036$, $p < 0.05$). The effects of the polychronicity block on turnover intentions were also significant (path $c = 0.708$, $SE = 0.224$, $p < 0.05$). Finally, the indirect effects of the polychronicity block via exhaustion were significant for turnover intentions [$a * b = 0.289$, $SE = 0.149$, $p < 0.05$; 95% CI (0.0089, 0.5968)]. These findings suggest that as the fit between individual polychronicity and organizational polychronicity moves to the higher end of the polychronicity continuum, individuals' exhaustion increases, with a corresponding increase in turnover intentions. Therefore, exhaustion partially mediated the relationship between I-O polychronicity fit and employees' turnover intentions. Hypothesis 2 was partially supported.

For hypothesis 3, we expected the perception of work overload to mediate the relationship between I-O polychronicity fit and turnover intentions. Mediation analysis reveals the polychronicity block to be significantly related to work overload (path $a = 0.803$, $SE = 0.179$, $p < 0.05$), while work overload was positively associated with turnover intentions (path $b = 0.532$, $SE = 0.075$, $p < 0.05$). The effects of the polychronicity block on turnover intentions were also significant (path $c = 0.570$, $SE = 0.242$, $p < 0.05$). Finally, the indirect effects of the polychronicity block via exhaustion were significant for turnover intentions [$a * b = 0.427$, $SE = 0.123$, $p < 0.05$; 95% CI (0.2022, 0.6875)]. These findings suggest that as the fit between individual polychronicity and organizational polychronicity moves to the higher end of the polychronicity continuum, individuals' perceptions of work overload increases, with a corresponding increase in turnover intentions. Therefore, work overload partially mediated the relationship between I-O polychronicity fit and employees' turnover intentions, and hypothesis 3 was partially supported. We report the mediation coefficients in Table 4.

Table 4. Mediation analysis using block variable

| | Exhaustion | Work overload | Turnover intentions |
|--|------------------|----------------|-------------------------|
| Direct effect of polychronicity block | 0.836* (0.35) | | |
| Direct effect of exhaustion | | | 0.345* (0.036) |
| Direct effect of polychronicity block | | | 0.708* (0.224) |
| Indirect effects of polychronicity block via exhaustion | | | 0.289* (0.149) |
| | | | 95% CI (0.0089, 0.5968) |
| Direct effect of polychronicity block | | 0.803* (0.179) | |
| Direct effect of work overload | | | 0.532* (0.075) |
| Direct effect of polychronicity block | | | 0.570* (0.242) |
| Indirect effects of polychronicity block via work overload | | | 0.427* (0.123) |
| | | | 95% CI (0.2022, 0.6875) |

Note. * = significant at 0.05 level

DISCUSSION

The study examined the relationship between I-O polychronicity fit and turnover intentions and whether exhaustion and the perception of work overload mediate this relationship. Practically, the study offers insights into I-O polychronicity fit and employee turnover intentions in project management environments to provide recommendations on managing multitasking and retaining project employees.

The results supported the hypothesized relationship between I-O polychronicity fit and turnover intentions. A key tenet of person-environment fit theory (Edwards, 1996) is that supplies-values misfit is related to employee turnover intentions, and this tenet was supported in our study. The finding that turnover intentions are lower when both individual polychronicity and organizational polychronicity are low is also consistent with the theory of time congruence (Kaufman et al., 1991). However, the result that turnover intentions are high when both individual polychronicity and organizational polychronicity are high is a novel finding and an exception to the theory of time congruence. This unexpected result may be explained through the mediating role of exhaustion and the perception of work overload. Constantly maintaining a fit between high individual polychronicity and high organizational polychronicity may exhaust an individual, or he or she may develop a perception of work overload. Both developments can lead to higher turnover intentions.

Theoretical implications

The results demonstrate that turnover intentions are lower when I-O polychronicity fit occurs on the lower, monochronicity end of the polychronicity continuum, and turnover intentions are higher when fit is observed on the higher end of the polychronicity continuum. Although the finding that fit has a different level of effect at different points on the continuum is consistent with previous theorizations of polychronicity fit (Hecht & Allen, 2005), the finding that fit on the higher end of polychronicity is related to higher turnover intentions is the first empirical evidence of this phenomenon. Regarding the influence of I-O polychronicity misfit, our findings show that turnover intentions are high when organizational polychronicity supplies exceed individual polychronicity values. This finding on the impact of excess polychronicity supplies is consistent with previous person-environment fit research indicating that individuals may experience negative outcomes when supplies are higher than employee values (Cummings & Cooper, 1979). By providing the first evidence of the link between I-O polychronicity and the direction of the polychronicity misfit, this study complements prior temporal congruence research emphasizing the importance of congruence between employee and organizational polychronicity (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999), and adds new insights into these phenomena.

The results on the mediating role of exhaustion and work overload are novel contributions to the temporal congruence research. Previous studies have directly linked a general fit to positive or negative outcomes without providing details about the explanatory variables that might exist in these relationships (e.g. Hecht & Allen, 2005; Oh et al., 2019; Slocombe & Bluedorn, 1999). This study provides initial explanations of the relationship between I-O polychronicity fit and turnover intentions via exhaustion and work overload. We argue that exhaustion and perceptions of work overload are valid explanations for the finding that fit on the higher end of the polychronicity continuum is related to higher turnover

intentions. Individuals might, in general, prefer to work on multiple things; however, when they work constantly on multiple tasks, employees may feel that they are overworked, their resources are depleted, or they are exhausted. Exhaustion and perceptions of work overload are valid explanations for employees' turnover intentions being higher when organizational polychronicity is higher than individual polychronicity.

Practical implications

The study carries practical implications for effectively planning and managing temporal phenomena in projects. The findings underscore that the temporal aspects of work and employee time-use preferences should be considered when managing and retaining project employees.

During the project-planning phase, project planners could consider the temporal characteristics and requirements both of the tasks to be completed and of the individual employees assigned to those tasks, in order to create temporal profiles along with other aspects of planning. Where possible, it would be appropriate to hire candidates after factoring in both the temporal profile of the work and individual temporal preferences, to create I-O polychronicity fit and avoid potential employee turnover.

During the execution phase, because monochrons and polychrons prefer to work differently, project managers could identify the temporal profile of each employee and, where possible, use different time-management strategies to reduce potential turnover intentions. Project managers will maximize monochrons' productivity when they assign them one task at a time to facilitate focus.

Further, to retain employees, job design could also be considered (Hecht & Allen, 2005). Job design should err on the side of lower rather than higher polychronicity supplies, given that excess supplies were associated with the highest level of turnover intentions. By

addressing job design, project managers may reduce the negative outcomes of employee exhaustion, work overload, and turnover intentions.

Finally, apart from hiring the right individual for the job and assigning tasks to monochrons and polychrons differently, project managers may consider addressing the work environment of the project. Our findings indicate that excess organizational polychronicity supplies can exhaust employees who, as a result of the excess, feel overloaded, so project managers should consider controlling or reducing multiple simultaneous work tasks. Effective regulation of multiple simultaneous tasks will help reduce employee exhaustion and perceptions of work overload, potentially decreasing turnover intentions.

Limitations and future research

The study is bounded by several limitations. We used self-report measures that may be subject to common method bias; however, the procedures recommended by Podsakoff, MacKenzie, and Podsakoff (2012) were applied to ameliorate this issue. For example, to increase validity levels and decrease method effects, the anonymity of participants was assured. Moreover, Harman's single factor test indicated that more than one factor accounted for most of the covariance. Future researchers could use longitudinal research designs to bring more clarity to analyses of the phenomena and to incorporate the dynamic and time-dependent nature of fit.

While we examined the mediating effect of exhaustion and perceptions of work overload on I-O polychronicity fit and turnover intentions, other mechanisms may explain this association. Future studies could therefore consider alternative mediator variables, for instance, time pressure and job-related anxiety. Time pressure and job-related anxiety can be potential mediators because excess polychronicity supplies can invoke the feelings of not finishing the job on time and producing subpar output.

Finally, we examined the supplies-values fit on the dimension of polychronicity because we focused on individuals' preferences with respect to opportunities in their organizational environment. Future research could explore demands-abilities fit on the dimension of polychronicity, by considering individuals' abilities to undertake multiple tasks vis-à-vis organizational requirements for multiple simultaneous tasks.

CONCLUSION

This research examined I-O polychronicity fit and its relationship with employee turnover intentions. Our research adds to the literature on person-environment fit, polychronicity, project management, and time-related issues in the workplace. Based on this research, supplies-values fit on the dimension of polychronicity is related to turnover intentions both directly and indirectly. Excess polychronic supplies are detrimental to employee retention and have the potential to trigger exhaustion and work overload. Further, all points of fit are not equal. That is, turnover intentions are only lower when individuals prefer to focus on one thing at a time and their work environment provides them an opportunity to focus on one thing at a time. By attending to individual employees' preferences for focusing on one task at a time or else multiple tasks simultaneously, managers are likely to see less exhausted and overburdened employees. By training managers to look for the polychronic orientations of their employees either at the time of hiring, during training, or in other stages of the employment cycle, project planners can expect to see significant improvements in important organizational and individual outcomes.

Additional information:

Table 5. Polynomial regressions and surface plot coefficients with control variables

| Variables | Turnover intentions | |
|-----------|---------------------|----------------|
| | Model 1 (SE) | Model 2 (SE) |
| Constant | 1.881 (0.585) | 1.891 (0.583) |
| Age | 0.015 (0.018) | 0.016 (0.018) |
| Gender | 0.268 (0.183) | 0.300 (0.183) |
| Tenure | -0.012 (0.028) | -0.017 (0.029) |

Table 5. Polynomial regressions and surface plot coefficients with control variables

| Variables | Turnover intentions | |
|-------------------------------|---------------------|----------------|
| | Model 1 (SE) | Model 2 (SE) |
| Poly | | -0.085 (0.087) |
| OrgPoly | | 0.327 (0.107) |
| Poly ² | | -0.16 (0.054) |
| Poly*OrgPoly | | -0.038 (0.077) |
| OrgPoly ² | | -0.136 (0.066) |
| R ² | | 0.075 |
| Fit (Poly = OrgPoly) line | | |
| Slope α_1 | | 0.24* (0.10) |
| Curvature α_2 | | -0.19 (0.13) |
| Misfit (Poly = -OrgPoly) line | | |
| Slope α_3 | | -0.41* (0.16) |
| Curvature α_4 | | -0.11 (0.10) |

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Conclusion to Study 4

In Study 4, one of the constructs of how individuals ‘use’ time, polychronicity, was studied. The main research question focused on examining the influence of individual-organizational polychronicity fit on employees’ turnover intentions. Polynomial regressions and response surface analysis revealed polychronicity fit on the monochronicity end of the continuum is associated with low intentions to quit while fit on the polychronicity end of the continuum is associated with high turnover intentions. Misfit was associated with high turnover intentions when organizational supplies of polychronicity were higher than individual polychronicity values. Exhaustion and perceptions of work overload partially mediated the main relationships. The findings of this study contribute to the theoretical understanding of polychronicity fit in particular and to the understanding of subjective time differences in general.

Chapter 6. Discussion and conclusion

Time is one of the central elements of people's experiences at work and studying time is critical for the study of organizational management (Mitchell & James, 2001; Roe, 2006; Shipp & Jansen, 2020). To better understand time-related individual and collective cognitions, attitudes, and behaviors, organizational behavior scholarship increasingly incorporates objective and subjective time in organizational research. Objective time, which is measured by the clock or calendar, is unidirectional, homogeneous, and absolute (Bluedorn & Denhardt, 1988; Doob, 1971; Schriber & Gutek, 1987). It emphasizes schedules (Zerubavel, 1985), deadlines (Gevers et al., 2006; Waller et al., 2001), punctuality, speed, and pace (Bluedorn & Jaussi, 2007). Subjective time is perceived and experienced by individuals. It is socially constructed (Schutz, 1967; Sorokin & Merton, 1937), cognitively cyclical (McGrath, Kelly, & Machatka, 1984), heterogeneous, and interpretive (Shipp & Cole, 2015). While there is abundant research on objective time, subjective time requires more scholarly attention (Ancona et al., 2001; Levasseur et al., 2020; Shipp & Jansen, 2020). This thesis aimed to study the influence of the subjective time differences of individuals on their behaviors and attitudes in temporary organizations. The primary research question was the following: How do employees' subjective time differences influence their organizational attitudes and behaviors in temporary organizations? In the thesis, the individual subjective time constructs of temporal focus, polychronicity, and pacing styles have been studied using multiple types and sources of data. The studies in this thesis have investigated how an individual's temporal focus, polychronicity, and pacing style influence their attitudes and performance in temporary organizations.

This concluding chapter first discusses the findings from the studies in Chapters 2-5, then the theoretical and practical implications and limitations of the research, and gives recommendations for future research. Finally, the overall conclusions of the thesis are presented.

Systematic review of time in temporary organizations

In Study 1, as reported in Chapter 2, a systematic literature review of the top three project management journals was conducted. The systematic literature review was conducted to address the first research question of the thesis: How is time conceptualized and applied in the literature on temporary organizations? A total of 101 papers were included in the review. It was found that time is considered an important element both in project management literature and in practice (Bakker, 2010; Bakker et al., 2016; Sydow & Braun, 2018), but that time in projects has not received the level of research attention it deserves (Delisle, 2019), as only 101 research articles are targeted at the concept of time in more than 50 years of project management scholarship. The findings show that time is conceptualized both objectively and subjectively in project management literature, but the objective conception has received more scholarly attention. The limited attention that has been paid to subjective time in projects is particularly problematic because understanding subjective time phenomena can help in managing projects and increasing our theoretical knowledge.

Temporal focus and performance behaviors

The second and third research questions of this thesis ask how individuals perceive their subjective attention towards past and present and relate it to their performance in the organization and how an individual's attention to past, present, and future are interlinked, and how these inform each other. In Study 2 (discussed in Chapter 3), the influence of temporal focus on employees' performance behaviors was examined using 34 semi-structured interviews with project professionals. Semi-structured interviews provided insights into how individuals perceive their subjective attention towards past, present, and future and relate this to their performance in organizations, and how individuals' past, present, and future inform each other in the workplace. The analysis of the interview data revealed that past, present, and future perceptions all influence performance and decisions in organizations. Individual

performance is somewhat positively influenced: if an individual has clear and relevant past experiences in relation to the current task or project; if they have capacities and skills in the present; and if current tasks and projects are clearly aligned with their future goals, or if they anticipate positive outcomes from their current tasks. These findings highlight the importance of all three temporal foci in relation to performance and decision making in organizations.

It was found that along with the separate influence from each temporal focus, there is a collective influence of attention towards all of past, present, and future on an individual's performance and decisions. Although, the collective influence of all three time foci on an individual's behaviors and decisions is in line with early theorization about the "totality of the individual's views of his [sic] psychological future and his [sic] psychological past existing at a given time" (Lewin, 1951, p. 75), it is seldom addressed in the current literature.

The analysis of the interview data further revealed that an individual's past, present, and future are interconnected, these temporal categories influence each other, and information flows freely between these categories. The interconnectivity of past, present, and future is embedded in the core theorization of mental time travel theory (Epstude & Peetz, 2012; Suddendorf & Corballis, 1997). The main tenet of MTTT points out the links and flow of information between an individual's past, present, and future. Individuals can travel mentally to the future based on their past experiences and information from their past. Although MTTT is well established in clinical and neuropsychology, it is seldom used in the organizational psychology and temporal focus literature.

Polychronicity and pacing styles fit and temporal adjustment

Study 3 (discussed in Chapter 4) addresses the fourth and fifth research questions of the thesis. The fourth research question asks: How is perceived temporal fit related to individuals' work outcomes? And the fifth research question asks: How do individuals react to low temporal fit? To address these questions, 55 semi-structured interviews were

conducted with project managers and project team members in information technology firms. Interviews provided insights into how individuals perceive and interpret high or low polychronicity fit and high or low pacing styles fit, the critical process of adjustment, and the role of supervisors in this process of adjustment. The data analysis revealed that individuals perceive high temporal fit positively and associate it with increased job satisfaction and improved relationships with supervisors. Results suggest that in cases of high temporal fit, satisfaction is a significant explanatory variable that links polychronicity fit and pacing styles fit to positive outcomes. In cases of low temporal fit, negative feelings like boredom, frustration, exhaustion, and perceptions of work overload and underload can potentially explain the link between polychronicity and pacing styles fit and the outcome variables.

The analysis of the interview data revealed that in cases of low temporal fit, individuals tended to adjust the situation through either reactive adjustment or active adjustment. It was found that in reactive adjustment, individuals mould their preferences according to their supervisor's preferences, while in active adjustment, individuals try to mould their supervisor's preferences to match their own preferences. These findings are in line with the theory of work adjustment (Dawis et al., 1968) and recent theorizations of congruence, where Jansen and Shipp (2018) have argued that congruence is not a static phenomenon but that instead it is a dynamic and time-dependent phenomenon. Finally, the interview data analysis revealed the role of supervisors in low temporal fit scenarios and in the process of employees' temporal adjustment. Supervisors play a role at two different stages when there is low temporal fit. First, supervisors create high or low fit, because they assign tasks and duties to individuals and enforce time-related requirements: supervisors can create high temporal fit if they consider individual preferences and task requirements; and conversely, they create low temporal fit if they do not consider individual preferences and task requirements, but instead simply allocate tasks randomly. Second, supervisors can play a

role in the process of temporal adjustment, facilitating it by providing support and flexibility to individuals who experience low temporal fit.

Individual-organizational polychronicity fit and employee turnover intentions

Study 4, discussed in Chapter 5, addresses the sixth research question of the thesis: How does I-O polychronicity fit influence individuals' turnover intentions? To answer this question, surveys were used to gather data on focal variables from IT project managers and team members. The study examined the relationship between individual-organizational polychronicity fit and turnover intentions, and whether exhaustion and perceptions of work overload mediate this relationship. Polynomial regressions and response surface modeling revealed that turnover intentions are lower when individual-organizational polychronicity fit occurs on the monochronicity end of the polychronicity continuum, while turnover intentions are high when fit is observed on the higher end of the polychronicity continuum. Although the finding that fit has a different level of effect at different points on the continuum is consistent with previous theorizations of polychronicity fit (Hecht & Allen, 2005), the result that fit on the higher end of polychronicity is related to higher turnover intentions is the first empirical evidence of this. Regarding the influence of individual-organizational polychronicity misfit, our findings show that turnover intentions are high when organizational polychronicity supplies exceed individual polychronicity values. This finding on the impact of excess polychronicity supplies is consistent with previous person-environment fit research which has shown that individuals may experience negative outcomes when organizational supplies on a dimension are higher than employees' values (Cummings & Cooper, 1979).

The results on the mediating role of exhaustion and work overload are novel contributions to temporal congruence research. Previous studies have directly linked a general fit to positive or negative outcomes without providing details of the explanatory variables that might exist in these relationships (e.g. Hecht & Allen, 2005; Oh et al., 2019;

Slocombe & Bluedorn, 1999). This study provides initial explanations of the relationship between individual-organizational polychronicity fit and turnover intentions through exhaustion and work overload. An individual might prefer to work on multiple tasks, but despite this, when they work constantly on multiple tasks, they may feel overworked or exhausted. Exhaustion and perceptions of work overload are valid explanations for an individual's turnover intentions being higher when organizational polychronicity is higher than individual polychronicity.

By providing the first evidence of the link between individual-organizational polychronicity and turnover intentions and the direction of the polychronicity misfit, this study complements prior temporal research emphasizing the congruence between employee and organizational polychronicity (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999) and adds new insights on this phenomenon.

Implications for theory

This thesis is situated in the broader literature domains of subjective time and project management; hence, these findings contribute to theory in both domains. At a broader level, this thesis stresses the importance of studying subjective time in organizations. It emphasizes and empirically examines organizational phenomena through the lens of subjective time. At a narrower level, the findings of this thesis bring several potential contributions to the literature on project management and temporary organizations, temporal focus, polychronicity, and pacing styles.

The results of this thesis suggest that despite the critical role of time in projects, it is not at the forefront of scholarship in project management. A systematic literature review of the top three project management journals revealed that only 101 articles target temporal issues. In these 101 articles, 87 focused on objective time and only 14 were focused on subjective time. This study contributes to the literature by synthesizing the existing literature,

identifying research gaps, and presenting directions for future scholarship on the role of time in project management. This systematic literature review lays a solid foundation for theory development in project management.

Temporal focus—an individual's attention towards past, present, and future—was studied in this thesis. It was found that attention to past, present, and future shape and inform performance and decision making in organizations. The temporal focus literature and the time perspective literature broadly assume that only a future focus is related to positive work outcomes because present focus can be ambiguous and may lead to impulsive decision making and that past focus is generally associated with negative outcomes (Maki et al., 2016; Zimbardo & Boyd, 1999). However, the results of this thesis reveal that attention to past and present are also related to better performance and better decision making in organizations. This result suggests that the influence of temporal focus on employee performance is not as simple as it looks, particularly in work settings. It is difficult to identify particular positive or negative relationships relating to any individual temporal category because there is also a collective influence.

The collective influence of all three temporal categories on employee performance is revealed in this thesis. Temporal focus collectively—in past, present, and future directions simultaneously—tends to shape individual performance and decisions. This empirical finding is a contribution to the temporal focus literature because the majority of the current literature follows the notion that there is one dominant temporal category which shapes and informs behaviors (Shipp et al., 2009; Zimbardo & Boyd, 1999). The finding here reinforces the need to study collective aspects of temporal focus in relation to organizational behaviors. The interconnectedness of past, present, and future is brought to light as individuals 'mentally wander' between the three temporal categories when making a decision or performing a task. Individuals take information from all three categories as the three influence each other and

information flows freely between them. This finding is a major empirical contribution because the current temporal focus literature treats past, present, and future separately, and seldom addresses the interconnectivity of the three temporal categories.

In terms of polychronicity—an individual's preference for focusing on multiple tasks at once (Bluedorn & Denhardt, 1988)—and pacing style—an individual's approach to working towards a deadline (Gevers et al., 2006)—the influence of individual-supervisor polychronicity and pacing styles fit on individuals' behaviors were studied. It was found that individuals experience positive outcomes when their polychronicity and pacing styles match those of their supervisor. In cases of high temporal fit, satisfaction was found to be the main explanatory variable which links polychronicity and pacing styles fit to positive outcomes. In cases of low temporal fit, negative feelings like boredom, frustration, exhaustion, and perceptions of work overload and underload can potentially explain the link between polychronicity and pacing styles fit and the outcome variables. Links between polychronicity and pacing styles fit and the outcome variables is in line with time congruence theory (Kaufman et al., 1991) and person-environment fit theory (Kristof-Brown et al., 2005). However, the explanatory mechanisms revealed in this thesis are novel contributions because the current literature links temporal fit directly to outcomes without detailing the explanatory variables.

Temporal adjustment, or the processes of matching an individual's and an organization's polychronicity and work rhythms, was found to be a relevant issue in the analysis of data in this thesis. An exploration of temporal adjustment mechanisms is a major contribution to the literature because researchers working with the theory of time congruence have tended to link low polychronicity and pacing styles fit to negative outcomes only. The findings in this thesis suggest that low temporal fit is a trigger to the process of temporal adjustment: this adjustment process begins when an individual experiences low temporal fit,

and as a result, they try to adjust the low fit by either working on their own preferences or by working on their supervisor's preferences. This particular finding is novel in temporal research—although work adjustment is an established phenomenon in the careers literature, it has not previously been integrated into temporal research.

Temporal leadership—the degree to which team leaders schedule deadlines, synchronize team member behaviors, and allocate temporal resources (Mohammed & Nadkarni, 2011)—emerged as one of the major features of polychronicity and pacing styles fit. The results revealed that the temporal leadership abilities of supervisors play an important role in creating high polychronicity fit and high pacing styles fit and in facilitating the processes of temporal adjustment. It was found that supervisors who know the temporal requirements of the work and know the temporal orientations of employees can create high temporal fit by assigning the right person to the right job. Similarly, a supervisor who knows that an individual is experiencing low fit can facilitate that individual's temporal adjustment toward better fit perceptions by showing flexibility or by assigning additional resources. Although temporal leadership is well established in the temporal diversity literature (Mohammed & Nadkarni, 2011), its role was not clear in the temporal congruence literature. The results suggest that temporal leadership is an essential element in creating high polychronicity fit and high pacing styles fit and in managing the temporal adjustment process.

Polychronicity fit does not always guarantee positive outcomes. The results of the quantitative data analysis in this thesis demonstrate that turnover intentions are lower when individual-organizational polychronicity fit occurs on the lower, monochronicity end of the polychronicity continuum, but that turnover intentions are higher when fit is observed on the higher end of the polychronicity continuum. This result about fit on the higher end of polychronicity being related to higher turnover intentions is the first empirical evidence of this phenomenon, as previous fit literature has associated a high fit to positive outcomes.

Regarding the influence of individual-organizational polychronicity misfit, the findings show that turnover intentions are high when organizational polychronicity supplies exceed individual polychronicity values. This finding on the impact of excess polychronicity supplies is consistent with previous person-environment fit research which suggests that individuals may experience negative outcomes when supplies are higher than employee values (Cummings & Cooper, 1979). By providing the first evidence of the direction of individual-organizational polychronicity misfit, this study complements prior temporal research that emphasizes the congruence between employee and organizational polychronicity (Hecht & Allen, 2005; Slocombe & Bluedorn, 1999) and adds new insights on these phenomena.

The discovery of the mediating role of exhaustion and work overload in the relationship between individual-organizational polychronicity fit and turnover intentions is a novel contribution to the temporal congruence research. Previous studies have directly linked fit to positive or negative outcomes without providing details of the explanatory variables that might exist in these relationships (e.g. Hecht & Allen, 2005; Oh et al., 2019; Slocombe & Bluedorn, 1999). This study provides initial explanations of the relationship between individual-organizational polychronicity fit and turnover intentions through exhaustion and work overload. We argue that exhaustion and perceptions of work overload are valid explanations for the finding that fit on the higher end of the polychronicity continuum is related to higher turnover intentions. An individual might prefer to work on multiple things simultaneously, but when they work constantly on multiple tasks, they may feel they are overworked, their resources are depleted, or they are exhausted. Exhaustion and perceptions of work overload are valid explanations for an individual's turnover intentions being higher when organizational polychronicity is higher than individual polychronicity.

Implications for practice

This thesis provides implications for practice based on the findings of the contributing studies. The findings of this thesis can help managers and employees to understand the basic mechanisms and constructs of subjective time. In a project context where there are explicit rules about objective time in terms of deadlines and the duration of activities, it is important to have a nuanced knowledge of subjective time to successfully execute projects. Broadly, this thesis informs managers and employees about subjective time, one of the key influencers of human behaviors in organizational settings. Understanding and managing the complex mechanisms of subjective time are as important for the successful delivery of projects as managing objective time. This thesis informs practice in three main aspects: recruitment and selection, training and intervention, and employee retention and the effective management of projects.

In terms of recruitment and selection, it is important that managers explicitly consider the aspect of subjective time. In Study 3 and Study 4, it was found that high temporal fit can be beneficial for employee performance and wellbeing, hence it is important to think about creating temporal fit right from the beginning. During the planning phase of a project, managers can create temporal profiles for jobs and the required temporal profiles of individuals who will execute those jobs. Using these temporal profiles, managers can then recruit and select individuals who are a better fit for the jobs. In designing job advertisements, explicitly stating the subjective time requirements along with the objective time requirements will attract suitable individuals. For instance, an advertisement might state that individuals in a role will be part of multiple projects executed in parallel and that individuals will have to perform multiple activities at once, or that individuals in the role will have to work closer to deadlines. Having such explicit temporal requirements in job advertisements will facilitate attracting and selecting the right individuals. Similarly,

subjective time constructs can be incorporated into interviews or employment tests to assess the temporal orientation of employees beforehand, allowing them to be selected according to the required job profile. Furthermore, according to the person-organization fit literature (Kristof, 1996), individuals compare their values and personalities with their prospective employer's values and brand image (Backhaus & Tikoo, 2004). Thus, organizations looking for personnel could brand themselves as, for example, a 'multitasking organization' or an 'early action organization', and as a result, polychrons or early action time pacers would be more likely to perceive a higher match between their values and personalities to that specific employer (Judge & Cable, 2006), increasing the likelihood of the recruitment of more suitable individuals.

In terms of training and intervention, this thesis enables managers to reflect on the subjective time orientation of their current workforce in projects and to train and develop them accordingly. Initially, project managers and the broader workforce could be trained on how to recognize and acknowledge differences in subjective time orientation, as the recognition and acknowledgment of different temporal orientations is beneficial for team cohesion and performance (Mohammed & Nadkarni, 2011). Subsequently, managers could be trained on how to manage and deploy employees with different temporal orientations—for instance, a polychron works differently from a monochron, and hence requires a different management approach. A trained manager who can manage temporally different individuals will have greater chances of success than a manager who is not trained to deal with subjective time differences. Furthermore, employees could be trained and developed to fit with the required job; for instance, a monochron can be trained to become good at handling multiple tasks at a time, or an individual with a deadline action pacing style can be trained to work in an early action pacing style.

In terms of employee retention and the effective management of projects, this thesis enables managers to avoid creating temporal misfits and to manage any temporal misfits effectively. Temporal misfits, or low temporal fit, can create negative feelings of boredom, exhaustion, mistrust of managers, and dissatisfaction, and these can potentially lead to decreased productivity and increased turnover intentions. Managers can exercise a temporal leadership role in assigning the right person to the right task to avoid negative feelings and reduce the degree of misfit. Managers can also show flexibility or provide extra resources to an employee who is in a process of adjusting to achieve high temporal fit and thus avoid the negative consequences of low temporal fit.

Research limitations

This thesis aimed to study the influence of subjective time in temporary organizations. The subjective time constructs of temporal focus, polychronicity, and time pacing style were studied using multiple types and sources of data. The separate studies in this thesis investigated how an individual's temporal focus, polychronicity, and time pacing style influence those individuals in temporary organizations. Together these studies provide useful theoretical and practical insights and highlight opportunities for future research. However, this thesis has limitations.

The thesis focused on studying temporal phenomena, but the studies were not “completely temporal” (Shipp & Cole, 2015, p. 49) as we took an interpretive approach which accounts for the influence and analysis of subjective time only and does not account for objective time. A completely temporal thesis, covering both subjective and objective aspects of time, could generate a more detailed understanding of temporal phenomena in organizations.

This thesis provided valuable insights about subjective time and its influence in temporary organizations, but the generalizability of the results to permanent organizations is

potentially limited. Because permanent organizations are characteristically different from temporary organizations, the findings here should be used with caution in permanent organizations. Studying subjective time in both temporary and permanent organizations and contrasting the findings from both could potentially generate a more detailed understanding of temporal phenomena in organizations more generally.

This thesis provided novel findings about the collective influence and interconnected nature of past, present, and future foci (in Study 2), and about the process of temporal adjustment and the role of temporal leaders in that process (in Study 3). However, these findings were not tested quantitatively in the later surveys. Testing these initial findings quantitatively would further increase our understanding and boost the confidence of managers who intend to use these findings in a practical way.

This thesis focused on the temporal phenomena in temporary organizations and provided valuable insights, but the findings are limited in terms of gender and cultural differences in temporal orientations and perceptions. Studying the gender and cultural differences in the future studies can offer theoretical sophistication to temporal literature. Gender and cultural difference studies of time in temporary organizations can provide valuable practical recommendations.

Conclusion

By assessing the influence of the subjective time constructs of temporal focus, time pacing style, and polychronicity, this thesis makes several important contributions to time-related phenomena in temporary organizations. Time and time-related issues are central to the effective management of projects. A knowledge of time-related phenomena can greatly assist project managers in ensuring project success and performance. Project management literature has focused more on objective time, but the findings of this thesis emphasize that understanding subjective time differences is crucial for the effective management of projects.

Subjective time in the form of temporal focus, time pacing style, and polychronicity influences organizational behaviors and the decisions of employees in different ways, and hence it needs additional managerial attention and considerations. The findings reveal that for managers to be effective, they must be able to identify subjective temporal differences between employees. Managers should focus on creating a fit between the temporal preferences of individuals and the organizational temporal requirements, because higher temporal fit is associated with positive individual and organization outcomes. Furthermore, this thesis has uncovered a process of temporal adjustment that occurs when low temporal fit is observed by individuals, and the role of leaders in facilitating that adjustment process. This thesis has also highlighted the potential organizational and individual benefits of the effective management of subjective time differences. Further subjective time research is needed to bring more clarity and new insights to temporal issues in organizations. Rather than being seen just as ‘temporal issues to be dealt with’, subjective time differences can be seen as valuable characteristics of individuals which can be skilfully managed to ensure both individual and organizational success.

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Appendices

Appendix A. Interview plan, Study 2

Introduction

Thanks for showing interest in this project and giving me an opportunity to interview you. Through this interview, we aim to understand your perception of time and its influence on your behaviors and attitudes in temporary organizations like construction projects, movie sets, and software projects. This interview will take around 45 to 60 minutes. All the information you provide will be kept confidential. If there is a need to directly quote a respondent's views in a publication or presentation, pseudonyms will be used—for example “according to respondent 1”. To record your responses, I will be tape-recording this conversation and taking handwritten notes. By no means does this jeopardize the anonymity and confidentiality of your participation.

Before we start the interview, can you please read the consent form and sign it for me. Can you please provide your demographic information like age, gender, and experience at the end of this form.

Questions

Q1. How do you think about time in general? When in your organization?

Q2. How do you think about time in terms of past, present, and future?

Q3. How do you relate your thinking about past, present, and future to your work?

Q4. How does your thinking about past, present, and future influence your work?

Q5. How do you explain the influence of thinking about past on your work? Thinking about present? Thinking about future?

Q6. Other than the topics we have covered so far, do you think there are other aspects of thinking about time and their influence on your work?

Closing

Thank you so much for your time and support. I am sure these inputs will add significantly to the findings of this research.

Appendix B. Interview plan, Study 3

Introduction

Thanks for showing interest in this project and giving me an opportunity to interview you. Through this interview, we aim to understand your perception of time and its influence on your behaviors and attitudes in temporary organizations like construction projects, movie sets, and software projects. In particular, we seek to understand the influence of your approach of using time and meeting deadlines on your behaviors and attitudes in your organization. This interview will take around 45 to 60 minutes. All the information you provide will be kept confidential. If there is a need to directly quote a respondent's view in a publication or presentation, pseudonyms will be used—for example, “according to respondent 1”. To record your responses, I will be tape-recording this conversation and taking handwritten notes. By no means does this jeopardize the anonymity and confidentiality of your participation. Along with the interview questions, I might ask you to respond to a short survey which is comprised of four questions.

Before we start the interview, can you please read the consent form and sign it for me. Can you please provide your demographic information like age, gender, and experience at the end of this form.

Questions

Q1. How do you think about time in general? When in your organization?

Q2. Can you please tell me about your general daily workflow? How do you utilize your time in your organization?

Q3. How do you prefer to perform your tasks? One task at a time or more than one task at a time? [if polychronic orientation is not clear, ask interviewee to fill out the short polychronicity survey] Why do you think this choice is better?

Q4. How does your organization require you to perform your tasks? One task at a time or more than one task at a time? How does the organizational requirements of doing one or multiple tasks simultaneously influence you?

Q5. How do you manage organizational requirements of doing one or multiple tasks simultaneously?

Q6. What is your initial response when you are told about a deadline? How do you approach a deadline? [if pacing style is not clear, ask interviewee to choose their style from pacing styles graphs]

Q7. How does this particular style of approaching a deadline help you in meeting a deadline? How does this style influence your performance?

Q8. How does your organization require you to meet a deadline? [if organizational pacing style is not clear, ask interviewee to choose a style from pacing styles graphs]

Q9. How does the organizationally required style of meeting deadline influence you?

Q10. How do you manage the organizational requirement of meeting a deadline in a particular style?

Q11. Before we close the interview, would you like to add anything else to our discussion?

Closing

Thank you so much for your time and support. I am sure these inputs will add significantly to the findings of this research.

Appendix C. Survey items, Study 4

Individual polychronicity - inventory of polychronic values (Bluedorn et al., 1999). These statements relate to your preferences of time use. Some people prefer to use their time doing one activity at a time, others prefer to do multiple activities at a time. Please indicate your agreement with the following statements (1 = “strongly disagree”, 7 = “strongly agree”).

1. I like to juggle several activities at the same time
2. I would rather complete parts of several projects rather than an entire project every day
3. I believe people should try to do many things at once
4. When I work by myself, I usually work on several projects at a time
5. I prefer to do several things at a time
6. I believe people do their best work when they have many tasks to complete
7. I believe it is best to have started several tasks before beginning another
8. I believe it is best for people to be given several tasks and assignments to perform
9. I seldom like to work on a single task or assignment
10. I would rather complete parts of several projects every day than complete an entire project

Organizational polychronicity - 10-item polychronicity supplies scale (Hecht & Allen, 2005). These statements relate to your organization’s requirements or preferences of time use. Some organizations require employees to use their time by doing one activity at a time, others require individuals to do multiple things at a time. Please indicate your agreement with the following statements (1 = “strongly disagree”, 7 = “strongly agree”).

1. It is typical of this job to have many tasks to complete
2. I am frequently asked to start new tasks when other tasks have not yet been finished
3. This job demands that I juggle several activities at the same time

4. On the job, I am required to complete entire projects every day, rather than completing parts of several projects
5. When doing this job, work must be done one thing at a time
6. This job requires me to complete one task before starting another
7. On this job, I am required to complete parts of several projects every day, rather than completing an entire project
8. This job requires people to do many things at once
9. This job often requires that I spend a little bit of time on several tasks moving back and forth from one thing to other
10. The demands of this job are such that I repeatedly have to switch gears from one task to another

Turnover intentions - four-item turnover intentions scale (Kelloway et al., 1999). These items relate to your intentions to quit the organization. Please indicate how much you agree with each statement (1 = “strongly disagree”, 5 = “strongly agree”).

1. I am thinking about leaving this organization
2. I am planning to look for a new job
3. I intend to ask people about new job opportunities
4. I don't plan to be in this organization much longer

Work overload - 13-item work overload scale (Reilly, 1982). These items relate to your experience of work overload. Please indicate your agreement (1 = “strongly disagree”, 5 = “strongly agree”).

1. I have to do things which I don't really have the time and energy for
2. There are too many demands on my time
3. I need more hours in the day to do all the things which are expected of me
4. I can't ever seem to have finished my tasks on time

5. I don't ever seem to have any time for myself
6. There are times when I cannot meet everyone's expectations
7. Sometimes I feel as if there are not enough hours in the day
8. Many times I have to cancel commitments
9. I seem to have to overextend myself in order to be able to finish everything I have to do
10. I seem to have more commitments to overcome than some other employees I know
11. I find myself having to prepare priority lists (lists which tell me which things I should do first) to get done all the things I have to do. Otherwise I forget because I have so much to do
12. I feel I have to do things hastily and maybe less carefully in order to get everything done
13. I just can't find the energy in me to do all the things expected of me.

Exhaustion - five-item exhaustion subscale in the Maslach burnout inventory (Maslach et al., 1986). Please indicate how often do you feel the following (1 = "never", 7 = "always").

- I feel emotionally drained from my work
- I feel used up at the end of the workday
- I feel tired when I get up in the morning and have to face another day on the job
- Working all day is really a strain for me
- I feel burned out from my work

Demographics

1. How many years have you worked at this organization, e.g. 1.5, 3 or 15: [.....]
2. Your sex (circle one): Male/Female 3. Year you were born (e.g. 1968): [.....]
4. Your department: [.....] 5. Your role in the organization: [.....]
6. Your highest completed education level (check one):
 1. School Certificate 2. Intermediate/College 3. Diploma of Associate Engineering
 4. University-Undergraduate 5. University-Postgraduate