Neuropsychological Trends

34
November 2023

Did it work? Effective decisions in the workplace

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ABSTRACT

Effective decisions are key in professional contexts as they significantly determine firms' long-term health and survival. Consequently, holding a clear understanding of the components that define decision effectiveness may be highly beneficial for organizations. However, the multidimensional nature of the construct has led to the lack of theoretical consensus on the defining components of decision effectiveness. The present work sought to identify some of the factors that may intervene in determining decision effectiveness, specifically taking into account factors that are intrinsic in managers' attitudes and skills. Three relevant factors were identified and discussed, encompassing analytic versus synthetic approach to decision-making, time-management and decision promptness, and active procrastination, and applicability of the investigated dimensions to employees' assessment organizational practices is proposed.

Keywords: decision effectiveness; analytic decision; time management; active procrastination; organizational neuroscience

1. Introduction

Within the complex machinery of an organization's managerial decision-making process, where a host of interrelated decisions are to be made, the study of decision effectiveness is vital as the sum of single decisions' outcomes contributes significantly to the organization's performance and survival (Geletkanycz & Hambrick, 1997; Harrison & Pelletier, 1998). However, research on decision effectiveness, its antecedents, and its effects on organizational health has yielded mixed findings to date. The existence of conflicting evidence is likely to be related, first of all, to the lack of sufficient scientific consensus on the definition of decision effectiveness itself (Carmeli et al., 2009). The gulf arises in the first place between the conception of decision effectiveness proposed by academic decision scholars and researchers working within the applied research framework. While the formers define decision quality mainly based on its internal consistency, the latter rather use criteria oriented on the decision outcomes (e.g., success, sales rates) to determine whether a decision should be considered effective or not (Carmeli et al., 2009; Yates, 2003). Interestingly, a strand of the literature has specifically focused on investigating the effectiveness of managerial strategic decisions. Strategic decisions are identified as large-scale, highly complex decisions aimed at accomplishing managerial goals and the leaders' expectations for success (Harrison & Pelletier, 1998; Papadakis, 2006; Papulova & Gazova, 2016). As such, they represent important decisions for the company's "long-term health" (Bass, 1893) as they determine the organizational direction and set the stage for lower-level decisions spread throughout the entire company's agents and departments (Eisenhardt & Zbaracki, 1992; Floyd and Lane, 2000). Within this research context, the effectiveness of strategic decision-making processes has been sometimes conceived either at the level of organizational performance (Goll & Rasheed, 1997) or as effectiveness yielded by a single decision (Butler, 1993; Elbanna & Child., 2007). However, even among scholars that identified single decision effectiveness as a unit of analysis, decision effectiveness has received a number of different and inconsistent definitions. For instance, some authors have centered their definition of the effectiveness of the decision based on the yielded outcomes (e.g., the realization of the decision objectives -that motivated the decision-making process in the first place- within a set of given constraints, such as time, cost, and resource-related limitations; Harrison & Pelletier, 1998) while others have provided a definition more focused on the quality of the decision-making process, such as the comprehensiveness and extensiveness of the process (e.g., effective decisions are defined by the extent they are realistic vs. unrealistic, namely, decisions bearing a high (vs. low) breadth of contribution to the firm performance, where alternatives are (vs. are not) thoroughly

sought, and long-term threats and opportunities are (vs. are not) considered extensively; Miller & Cardinal, 1994; Carmeli et al., 2009).

Based on the pre-existing literature, it appears that the effectiveness of managerial decisions is influenced by a variety of factors, both intrinsic and extrinsic to the single decision. Factors such as environmental variables which are external to the organization (e.g., opportunities and threats from the external context, socio-political factors), together with characteristics of the internal organization (e.g., management style, technology) do not simply build the background where decisions take place, but they are also factors playing a role on influencing the outcome of the decision at stake. On the other hand, numerous factors can account for the effectiveness of the decision which are intrinsic to the decision and the decision-maker's attitudes (Elbanna & Child, 2007; Harrison & Pelletier, 1998). Building on this evidence, the authors' endeavor is to identify a set of relevant attitudes and abilities of the managerial decision-maker. The rationale for this endeavor stems from the assumption that gaining a more consistent and comprehensive understanding of these variables might help organizations to further develop sound and evidence-based models for the assessment of organizational strengths and weaknesses, specifically contributing to the evaluation of managers' abilities to perform effective decisions.

The authors propose three dimensions that may be worthy of attention: 1) analytic vs. synthetic approach to decision; 2) time management and decision promptness; 3) active procrastination.

1.1 Analytic versus synthetic approach to decision

The debate on the dichotomy between rationality and intuition in decision-making has a long tradition, that has certainly inherited some impulse from dual process theories (Schneider & Shiffrin, 1977; Kahneman, 2011; see also Brocas & Carrillo, 2014; Gawronski & Craighton, 2013; Grayot, 2020). While the literature provides abundant evidence of the relationship between rationality (the analytic approach) and decision outcomes, intuition (the synthetic approach) has long been underinvestigated in relation to decision effectiveness, presumably due to a common misconception passed down from early literature on the topic, which identified intuition as a form of irrational process. However, intuition should be rather conceived as a process that, although occurring fast, unconsciously, and through an irrational unfolding, possesses a grounded knowledge base that is acquired through experience and is then automatically applied when conclusions are reached (Burke & Miller, 1999; Cert & Wilcockson., 1996). Intuition-based decisions are driven by rapid, affectively charged judgments, that stem from holistic associations (Dane & Pratt, 2007) rather than from a thorough assessment of available

information. Because of these qualities, intuition generally finds expression through hunches and gut feelings (Khatri & Ng, 2000; Sadler-Smith & Shefy, 2004) as well as through emotions (Sayegh et al., 2004; Seo & Barrett, 2007). Conversely, rationality assumes that a complex situation that demands a decision can be segmented into separate structured decision problems, each of which can be solved by collecting and analysing available information, evaluating alternative options, and estimating the best suitable solution to enact (Dean & Sharfman, 1993). Hence, rational processes are actively performed through the conscious volition of the decision-maker by the use of information search and scrutiny, knowledgeability, and cognitive computations (Ram & Ronggui, 2018).

Despite the abundance of evidence suggesting that the analytic approach is more solidly associated with superior decision effectiveness (Dean & Sharfman, 1993, 1996; Elbanna, 2006; Elbanna & Child, 2007; Kaufmann et al., 2012; Miller & Cardinal, 1994), the recent literature has brought forward the idea that intuition may actually have a beneficial effect in strategic decision-making (Butler, 2002). As a matter of fact, some studies have found that a decision-making process based on intuition could achieve a positive outcome when the decision process occurred within highly dynamic environments, where information becomes rapidly outdated, or under high-uncertainty situations, where information availability is scarce (Akinci & Sadler-Smith, 2012; Dane & Pratt, 2007). For instance, Khatri and Ng (2000) found that intuition yielded a superior decision outcome when applied within a dynamic environment as compared to a stable environment. Additionally, there is evidence that adopting the sole analytical perspective can actually be linked to poor decision-making. Harrison & Pelletier (1998) discuss the risk associated with the use of "computational processes" within the organizational context. These authors conceive computational processes as rather simplistic in nature as these are aimed at obtaining the best possible solution (the optimum) by disassembling a complex decision into separate decision problems. Each decision problem is solved through quantitative processes, with structured and predefined procedures, which generally result in the underestimation of the strategic decision complexity. Recent studies have also provided evidence that the adoption of rational procedures only may hamper job performance. Indeed, sourcing teams that adopted analytical procedures in supplier selection decisions resulted impaired in their ability to make holistic decisions and to reach a global satisfactory performance, whereas teams that focused on experience-based procedures (intuition) achieved better performances on all the investigated outcome measures (Kaufmann et al., 2014).

As opposed to computational processes, judgmental processes involve selecting an option based on a judgment that is realistically based on incomplete information. The judgemental process "*acknowledges the uncertainty*

attendant on most strategic choices and accepts the omnipresent constraints on the human decision maker" (Harrison & Pelletier, 1998). By aiming at a satisficing outcome rather than the optimum, judgemental processes are supposedly characteristics of most effective decisions.

Interestingly, large evidence from the neuroscientific field of investigation has been collected on the beneficial contribution of emotional implicit responses to decision-making (Bechara & Damasio, 2002). Seminal clinical studies on patients with lesions of the ventromedial prefrontal cortex showed that dysfunctions of the anticipatory autonomic component of the emotional response to risky decision-making led to impaired decision performance (Bechara et al., 1996). More recently, studies on healthy population are showing that emotional responses (Sansone & Balconi, 2022) and accurate perception of bodily information evoked by the emotional response (i.e., interoception) can support adaptive decision-making (Balconi & Canavesio, 2016; Balconi et al., 2015; Dunn et al., 2010), especially if the emotional response is not extreme (Balconi & Lucchiari, 2005; Balconi et al., 2017; Lo & Repin, 2002; Peterson, 2007).

Neuroscience studies have as well supported the idea that the neural system hosts two separate networks that are activated by analytical tasks, on the one hand, and by socio-affective contents and innovation processes on the other (Jack et al., 2013). Specifically, the Task Positive Network (TPN), which lies within dorso-parietal and lateral prefrontal regions, has been shown to be engaged during mechanical and analytical tasks, whereas the Default Mode Network (DMN), which involves medial prefrontal, cingulate, lateral-inferior parietal and temporo-parietal cortices, has been widely associated with emotions and social information processing (Amodio & Frith, 2006) and has been proposed to host the roots of intuitive thinking (Jack et al., 2013; Gronchi & Giovannelli, 2018). The DMN and TPN are suggested to constitute the neural underpinnings of two antagonistic cognitive modes, which are mutually suppressive and virtually incompatible, and accomplish information processing by relying on distinct sets of resources. The cognitive mode elicited by the task typology (mechanic or social) will determine the recruitment of the TPN or the DMN, respectively, which in turn will engage distinct sets of resources (analytical or social-emotional in nature) to accomplish information processing. Although mutually antagonistic, it has been suggested that, during decision-making, the two networks of areas can be simultaneously active, which is plausibly indicative of a communication mechanism between the two networks by which social-emotional information elaborated by the DMN is used to inform analytical cognitive processes carried out by areas involved in decision making and task response (Jack et al. 2013).

Relevant to the point, is the observation that recent findings have

suggested that rather than trying to establish the superiority of the analytic or the synthetic approach in decision effectiveness, new streams of research must direct their attention to achieving a deeper understanding of how rationality and intuition are intertwined. Indeed, recent evidence has suggested that optimal strategic decision-making may benefit from the integration of both rationality and intuition (Elbanna, 2006; Elbanna & Child, 2007; Kolbe et al., 2020). Some authors have proposed that each decision-making approach may be successful and preferable according to different contexts. The decision-maker may be led to engage in one of the two decision modalities based on the characteristics of the decision at stake. As mentioned above, intuition is sometimes revealed to be the best-suited approach under uncertain and unstable conditions (Khatri & Ng, 2000; Kaufmann et al., 2014). Other conditions were identified that appear to call for synthetic (vs. analytic) decisions. For instance, when decisions are perceived to be motivated by an opportunity, managers tend to engage preferentially in an intuitive decision-making process; conversely, if the decision motive is perceived as a crisis, they tend to respond with more rational decisions and analytical processes (Jackson & Dutton, 1988; Papadakis et al., 1999). Similarly, the perceived importance of a decision may shift the managers' decisional approach towards a more rational criterion as the importance of the decision increases (Papadakis et al., 1998). However, a more meaningful interpretation of the interrelation between rationality and intuition should be searched building on the knowledge that decisions are seldom either rational or intuitive (Salas et al., 2010). Indeed, it has been proposed that both systems can operate simultaneously, sequentially, or can display more complex patterns of interaction within a decision process (Kolbe et al., 2020), including repeatedly switching from one modality to the other in the course of the decision-making process, or even determining modulatory effects of one modality over the other (Calabretta et al., 2017; Evans, 2003; Salas et al., 2010). Interestingly, it may be worth noting that this debate on the dual nature of decision-making parallels the recent debate that is investing dual-process theories in other fields, such as decision neuroscience (Grayot, 2020). The dual system account has long theorized that humans are endowed with one automatic, fast neural pathway that subserves instinctive, emotion-driven processes as opposed to a controlled, slow pathway for deliberate cognitive processes. However, evidence has shown that this interpretation of the neural system may be overly simplistic: rather than simply switching from the instinctive to the controlled modality, the human brain is endowed with multiple neural circuits that participate in a modulatory network. Within this network, each circuit may interact with others through excitatory or inhibitory connections, giving rise to sophisticated modulatory mechanisms through which a host of cognitive and affective-related underlying

mechanisms can modulate the expression of decision-making processes (Phelps et al., 2014).

1.2 Time management and decision promptness

Effective decisions happen at the right time. A decision made with the right timing can help the organization to get as close as possible to the best outcome, and to derive the maximum benefit from the opportunity that has triggered the decision (Harrison & Pelletier, 1998). A conscious effort must be exerted by the manager to identify the optimal time for making the decision, which includes the manager's effort to become aware of the moment the right amount of information has been collected to enact a sufficiently informed decision (Harrison & Pelletier, 1998). The act of continuing to gather information mindlessly comes indeed at a cost (Trull, 1966). The exertion of such conscious effort is hence considered to be a relevant aspect to act on when improvement of the timely management of effective decisions is needed (Harrison, 1995).

Beyond the identification of the right time, a skilled manager also needs to carry out all the steps involved in the decision made within the given time constraints (Harrison & Pelletier, 1998). Time management is broadly recognized to be a topic of interest for business organizations. The worldwide rise of business competitiveness generates constant pressure to increase productivity and to ensure immediate availability of services, resulting in the contraction of time expenditure, actions compression, and the need for timely execution of decisions (Garhammer, 2002; Orlikowsky & Yates, 2002). At the same time, the ever-growing permeation of information and communication technologies in organizations, while contributing to increasing the fast-paced rhythm of organizational processes, has also introduced more distraction opportunities (Alvarez Sainz et al., 2019). Such phenomena have granted a periodically renewed interest in the investigation of time management construct among organizational researchers and practitioners.

The literature on time management has provided a variety of definitions and operationalizations of the construct that have seldom found common ground among scholars. Indeed, according to the review proposed by Claessens et al. (2007), because of its multidimensional nature, time management has been defined according to different perspectives as, for instance, a technique to manage time effectively and increase time availability to pursue enough activities (King et al.,1986; Macan, 1994, 1996; Macan et al., 1990); a set of practices aimed at maximizing productivity and supporting the accomplishment of the goals set (Britton & Tesser, 1991; Hall & Hursch, 1982; Lakein, 1973; Lay & Schouwenburg, 1993); an ability to plan, allocate

time, and prioritize the most important goals (Burt & Kemp, 1994; Francis-Smythe & Robertson, 1999a; Kaufman-Scarborough & Lindquist, 1999); an instance of self-regulation in the temporal domain (Eilam & Aharon, 2003; Griffiths, 2003; Koch and Kleinmann 2002); or even the perception of an individual's purposive use of time (Sabelis, 2001). One of the most solid theories on time management is the process model proposed by Macan and colleagues (1994), which identified three constituent underlying factors, namely, the setting of goals and priorities, the use of mechanics, such as to-do lists, and the preference for an organized way of working. Building on the literature, a more recent and complete definition of the construct was derived by Claessens and colleagues (2007) which devises time management as a set of *"behaviours that aim at achieving an effective use of time while performing certain goal-directed activities"*. This definition encompasses three types of behaviors: i) time assessment behaviors, which tap into the dominion of awareness of one's own use of time and constraints in preparation for taking on a task, ii) planning behaviors, involving goals identification, planning, and prioritization to support an effective allocation of time, and iii) monitoring behaviors, which allows for a mindful assessment of one's actual time use while carrying out the tasks, which allows for a feedback loop.

Claessens' definition and dissection of the construct better clarify the self-regulatory nature of time-management ability. In fact, planning, execution, and monitoring of goal-directed behaviors are all recognized to be part of a set of domain-general control mechanisms, i.e., the executive functions, which play a vital role in the regulation of human adaptive behavior and serve as a fertile ground for the development of self-regulation (Hofmann et al., 2012). Despite sharing common mechanisms and purportedly common neural underpinnings rooted in the prefrontal cortex, executive functions encompass manifold functions, including the inhibition of task-irrelevant distractions, maintenance of task-relevant information and updating of goals and plans in the working memory, and the timely shift from one mental strategy to another (supposedly, a more adaptive one) (Miyake et al., 2000). The relative separability of these functions has been supported by the identification of distinct neural substrates across frontal networks and subcortical structures associated with distinct executive functions. For instance, while monitoring behaviors recruit the dorso-lateral region of the prefrontal cortex, the update of working memory and maintenance of memory for temporal orders seems to preferably rely on the superior frontal cortex (Stuss et al., 2002; Wager & Smith, 2003). A separate discussion might be partially required for time assessment behaviors, as there is

evidence that cognitive time management processes may be executed by a distributed network of areas specifically involved in providing us with an "internal clock" and functionally separate from other executive functions (Meck, 2005, Meck et al., 2013; Rubia & Smith, 2004). However, as time estimation engenders marking the beginning of an event and maintaining updated estimates of the time passed from the start of that event, the functioning of the internal clock is nevertheless deemed to be interrelated with executive functions, such as attention and working memory processes (Ustun et al., 2017).

Among such a composite set of control mechanisms, three processes were suggested to be particularly essential for the unfolding of appropriate self-regulatory behaviors, such as time management (Hoffman et al., 2013). As self-regulation is considered the ability to deploy goal-directed behaviors pursued within a temporal perspective, one necessary process is the mental representation of one's own goals to be achieved. Working memory appears to be precisely involved in the process of maintaining an active representation of the target goals and monitoring for updates, which crucially provides behavior with a meaningful direction to pursue. Secondly, motivation is a vital component to allow individuals to consistently put into place the effort needed to reach the proposed goals; however, it will not be discussed here as it does not belong to the family of executive functions. Finally, conducts intended to reduce the gap between the set goals and the actual state of the individual should be put into action. This process is extensively supported by executive functions. In fact, working memory allows redirecting executive attention to the goal-relevant information over time while shielding the goals from the interference of distractors and temptations through passive and active inhibitory processes, and overriding impulsive (or learned) behavioral responses as well as thoughts and emotions that would be counterproductive to the attainment of the goals. Although not exhaustive, this brief presentation of the neural underpinnings of executive functions and their interrelatedness with self-regulatory processes -of which time management is an instance- was here provided with the purpose of contributing to the discussion on the definition of time management from a neuroscientific perspective. In fact, although the cognitive and organizational psychology research strands have struggled to reach a consistent theoretical and operational definition of the construct of time management, the knowledge gained in the last decades of cognitive neuroscientific research on executive functions may help inform future investigation on time management processes at the workplace.

Going back to the cognitive psychology research tradition, a moderate number of studies have investigated the possible antecedents of time management ability and highlighted that time management is significantly influenced by a host of dispositional traits. Personality traits such as Conscientiousness (Watson, 2001), Trait Procrastination (Lay & Schouwenburg, 1993), Time personality (Francis-Smythe & Robertson, 1999), and monochronic (the preference for focusing on one task at a time) versus polychronic (the preference to split focus into many tasks simultaneously) style (Hecht & Allen, 2005; Kaufman-Scarborough & Lindquist, 1999), may serve as precursors of time management.

Although research has provided some support for the dispositional nature of the antecedents of time management, it is worth noting that time management is a non-innate ability, configured as a self-regulatory process that needs to be learned and trained through experience (Wolters & Brady, 2020). The interest in enhancing time management skills through training programs has flourished starting from the early 1950s (McCay, 1959). Indeed, a number of studies has focused on the assessment of the outcomes of time management training in the workplace, under the assumption that time management ability can be modified and improved through effective training, which in turn would have beneficial effects on the managers' job performance (Claessens, et al., 2007). For instance, studies have reported increased effective prioritization and more frequent time management behaviors following the administration of training (Green & Skinner, 2005; Van Earde, 2003). Noteworthy, the neuroscientific literature has also provided evidence that self-regulation and executive functions can be enhanced by training and can generalize to other domains of human cognition (Jaeggi et al., 2008; Muraven et al., 1999). The recognized importance of time management skills in the workplace has led researchers not only to devise interventions aimed at training such abilities in employees, but also to propose educational interventions for college students to support the early development of such a crucial skill before they reach the workplace (Alvarez Sainz et al., 2019).

Indeed, the importance of raising skilled time managers lies in the fact that time management has a relevant impact on job performance. Overall, there is evidence that better time management skills yield more positive outcomes on several aspects related to performance. For instance, capable time managers are able to formulate more accurate esteems of time required (Burt & Kemp, 1994) and to prioritize, as they spend more time on high-priority tasks (Hall & Hursch, 1982). They also show a higher capability to adjust plans to meet their goals (Eilam & Aharon, 2003). Managers who effectively engage in setting goals and priorities -hence displaying correct management of time – tend to achieve better results (Hellsten, 2012).

Besides, time management is consistently associated also with more positive outcomes on a host of psychological and health-related variables. Time management was found to be positively associated with perceived time control (Adams & Jex, 1999; Macan, 1994) and job satisfaction (Davis, 2000; Macan, 1994), and to be negatively associated with stress-related variables, such as job-induced and somatic tension (Davis, 2000; Macan, 1994); strain (Jex & Elacqua, 1999); burnout and emotional exhaustion (Peeters & Rutte, 2005).

However, the literature supports that time management is likely not to yield a direct effect on job performance, but rather to interact with other predictors, by mediating their effect on performance. For instance, perceived time control was suggested to mediate the effect of trait procrastination on agitation, so that procrastinators were experiencing lower levels of time control compared to non-procrastinators, which in turn determined an increase in agitation-related emotions (Lay & Schouwenburg, 1993). Time management was also shown to moderate the relationship between autonomy, work demand, and burnout. Specifically, under low autonomy conditions, where decision latitude was constrained, teachers who engaged more in time management practices experienced less emotional exhaustion and more personal accomplishment as compared to teachers who engaged less in time management practices, suggesting that time management skills may play a protective role through a compensatory mechanism for low autonomy (Peeters and Rutte, 2005). Also, time management could moderate the relationship between task performance and organizational citizenship behavior (a form of helping behavior in the workplace that supports task performance by promoting the social and psychological context) (Rapp et al., 2013) in a way that leads skilled time managers to achieve superior task performance the more helping behavior they display, while causing poor time managers to decrease performance when the amount of helping behavior increases. Time management skills may provide managers with a better ability to leverage the reciprocal advantages stemming from social dynamics in the workplace.

1.3 Active procrastination

Expanding on the concept of time management, a meaningful, related dimension that did not pass unnoticed in the time management research, is procrastination. Procrastination is recognized to be a complex phenomenon involving more than the failure of time management, as it appears to be deeply intertwined with motivational, cognitive, and affective dimensions, such as self-esteem or guilt (Fee & Tangney, 2000), as well as self-regulation (Steel, 2007). Procrastination is usually regarded as a self-defeating behavior leading to a number of negative outcomes that weigh over the procrastinator's performance

(both academic and professional) and well-being (Steel, 2007). However, a positive connotation of procrastination has recently drawn attention among scholars (Choi & Moran, 2009; Chun Chu & Choi, 2005). While the "traditional" type of procrastination (passive procrastination) causes individuals to postpone tasks because of their inability to make decisions with an appropriate timing, a*ctive procrastination* does not imply hindered ability to decide and carry out the decision on time, but rather it involves a conscious decision to delay work in favor of prioritization of other tasks (Chun Chu & Choi, 2005). When procrastination is intentionally enacted with the purpose to spend time on other preparatory activities (e.g., planning and collecting propaedeutic information), postponing one's tasks may have beneficial outcomes (Knaus, 2000).

According to Chun Chu & Choi (2005), active procrastinators differ from passive procrastinators based on four core characteristics: affective preference for time pressure, intentional decision to procrastinate, capacity to meet deadlines, and achievement of satisfactory outcomes. One first distinctive characteristic of active procrastinators is indeed the preference for working under strict deadlines. While time pressure can be detrimental for passive procrastinators, active procrastinators thrive in performing under time constraints. Tight schedules make them feel challenged and motivated to perform quicker and in more creative ways, providing them with an internal source of motivation which sum up to the extrinsic motivation to meet external requests.

Secondly, active procrastinators make reasoned, voluntary decisions to put off tasks in order to adjust their initial plans according to new priorities. Indeed, possessing a fluid concept of time structure is a crucial characteristic of active procrastination, which provides individuals with the necessary flexibility to question their priorities and to adjust their pre-established schedule in order to timely respond to evolving external demands. Choi & Moran (2009) also demonstrated that active procrastinators are more likely to engage in polychronic time management behavior than monochronic, showing a preference for multitasking strategies. This type of behavior may be highly beneficial in all those workplaces where fast-paced rhythms, frequent interruptions, and multitasking are distinctive requirements. Moreover, such a loose structure of time was suggested to facilitate the perception of having control over time: the possibility to choose how to organize one's own tasks and priorities helps build a more purposeful perception of one's time use.

The third identified component is the ability to successfully meet deadlines. Stress-coping strategies are suggested to play a major role in initiation, pursue, and attainment of goals within deadlines. Indeed, while passive procrastinators rely primarily on avoidance-oriented coping strategies, active procrastination is characterized by a predominant reliance on task-

oriented strategies. The prevalence of task-oriented strategies in active procrastinators is suggested to be facilitated by the higher perception of control and self-efficacy that distinguishes active procrastination from the passive form. Combining their ability to minimize stress by promptly tackling problems with the skill to accurately estimate the amount of time needed to pursue their goals, active procrastinators are capable of meeting deadlines considerably more efficiently than passive procrastinators, who will try to reduce stress by ignoring the stressor or distracting themselves from it. Findings from Choi and Moran (2009) have supported the positive relationship between active procrastination and personality traits such as high emotional stability and extraversion, sustaining the hypothesis that active procrastinators can rely on high levels of self-confidence, which proves particularly beneficial when embracing the risk of subjecting themselves to last-minute pressure.

In a related vein, the fourth defining component of active procrastination is the ability to reach satisfactory outcomes. Indeed, despite their decision to procrastinate, active procrastinators have the ability to motivate themselves and to effectively allocate time to reach their objectives within the set time constraints. On the other hand, passive procrastinators lack the ability to concentrate on the task with higher priority and tend to relieve stress by shifting the focus to other, more pleasurable, and rewarding activities, leading them towards self-harming outcomes.

It has been proposed that active procrastination would be better conceived as a form of strategic, deliberate delay rather than a form of procrastination (Chowdbury & Pychyl, 2018). As traditional procrastination is to be intended as a failure of self-regulation processes triggered by emotion regulation deficits, which then results in the impossibility to pursue longer-term goals, this construct would have little to share with this form of purposeful, adaptive delay. "Active procrastination" (or purposeful delay) has shown indeed to be an adaptive form of self-regulatory process, which positively correlates with self-regulation ability, self-efficacy, conscientiousness, and proactive coping strategies (Chowdbury & Pychyl, 2018).

Active procrastination is gaining interest in a variety of academic contexts (Abramowski,2018; Qian, 2019) and the authors believe it could benefit from further investigation from other disciplinary perspectives, such as organizational neuroscience. Indeed, the ability to organize time with flexibility, to handle time pressure in a constructive way, combined with effective regulation of one's motivation to initiate and accomplish set goals, are key capabilities to display in the workplace. As these abilities require a number of cognitive processes that are known to be rooted in executive functions, neuroscientific research could shed light on these processes in a meaningful way, that could provide organizations with applicable insights.

For instance, organizational scholars may take advantage of the neuroscientific approach to help disentangle the relationship between active procrastination and multitasking as the neural correlates of the latter, which has been theorized by some to be a core feature of active procrastinators, have been widely targeted by neuroscientific and neuropsychological studies. The investigation conducted on patients suffering from frontal lesions, in fact, has uncovered the existence of a "strategy application disorder", which specifically impairs multitasking ability while leaving the other executive functions intact (Burgess et al., 2000). The study of these patients has allowed to identify three cognitive systems that appear to be selectively involved in multitasking and task switching, which are rooted in Broadmann Area 10 (as well as adjacent BA 8 and 9; Burgess, 2000), and the recent confirmation of the existence of a core network of frontal areas selectively recruited by multitasking has come from experimental cognitive neuroscience (Worringer et al., 2019). The three components proposed by Burgess (2000) encompass retrospective memory, planning, and prospective memory: relevant to the present discussion, prospective memory represents the ability to put into practice delayed intentions and to "follow one's plan", which shows clear similarities with the concept of purposeful delay of planned tasks that lies at the core of active procrastination. Hence, the newborn field of investigation on active procrastination might greatly benefit from the existing evidence on multitasking and prospective memory's neurophysiology.

In a related vein, research has suggested that, although individuals with a preference for polychronicity -like active procrastinators- might enjoy juggling several tasks simultaneously more than addressing one task at a time, a tendency for polychronic strategy is not necessarily predictive of better multitasking performances; conversely, working memory capacity and attention are (Konig et al., 2005). However, the lack of awareness of one's own strengths and limits in working memory capacity and attentive skills may harmfully lead professionals to elect polychronicity as a favourite strategy irrespective of their actual ability. Also, a recent study has shown that eye-tracking technology combined with machine-learning techniques allows for automatic recognition of individuals' polychronic or monochronic tendencies based on eye-movement analysis (Barth et al., 2022). Combining this technology with sound neuropsychological tests for working memory and attention assessment might represent a fruitful approach to rise professionals' awareness of their own limits and dispositions in multitasking. This would make it possible, on the one hand, to identify professionals that can actually capitalize on multitasking and

that may fit fast-paced, dynamic job environments with better performance and well-being outcomes (Kirchberg et al., 2015) or, on the other hand, to recognize individuals whose time-management strategy requires adjustments or training.

Finally, a number of studies have already investigated the neural underpinnings of passive procrastination and self-regulation failure (Heatherton & Wagner, 2011; Gao et al., 2021; Zhang et al., 2019). As active procrastination is considered an adaptive form of procrastination by some, but it has been debated to be misconstrued by others, the neuroscientific approach may offer the possibility to investigate whether the two presumed forms of procrastination rely on the same neural systems. In other words, the biology of the decision-maker's neural system may set the constraints of the psychological theories at stake.

2. Future work

The present article has sought to contribute to the discussion on decision effectiveness in professional contexts. The literature highlights that the multidimensionality of decision effectiveness has led to scarce academic consensus on the defining characteristics of decision effectiveness (Carmeli et al., 2009), contributing to unclarity also concerning the identification of the outcome variables that could be expected to reflect effective decisions. This work has tried to identify some of the factors that are deemed to have an impact on the effectiveness of managerial decisions, focusing specifically on variables that are intrinsic to the decision-makers' attitudes and capabilities (rather than environmental and organizational factors). This approach was selected in an attempt to maximize the applicability of the gained knowledge and insights to organizational contexts, with specific reference to the processes of employees' assessment, such as the evaluation of managers' abilities to perform effective decisions.

A comprehensive review of all the relevant capabilities of professional decision-makers is out of the scope of the present article. However, the authors believe there are other distinctive components of decision effectiveness that deserve deeper investigation. The first is delegation, namely, the action of strategically enabling others to act (Thompson, 2012), which is positively related to job performance, self-efficacy, and good time-management skills. Delegation in the workplace is also receiving signals of interest from

neuroscientific research, because of its interconnection with trust and oxytocin-mediated empathetic dynamics (Zak, 2018). A second variable of interest is related to the manager's ability to mindfully handle group decisions, because of the suggested link existing between such capability and firm performance (Csaszar & Egger, 2013). Decision neuroscience has profusely provided evidence of the importance of taking into account that most of our daily decisions are embedded within complex social environments and has provided valuable insights on the effect of social mechanisms such as trust, reciprocity, social norm conformity, and competition on decision-making (Rilling & Sanfey, 2011). We advocate for the need for further research to shed light on the relationship between these proposed constructs and decision effectiveness.

Funding

Università Cattolica del Sacro Cuore contributed to the funding of this research project and its publication (grant D3.2 2023).

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