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Daydreaming at work: an overview of the literature and a descriptive analysis

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Abstract   The concept of daydreaming, which is frequently studied in the psychology literature, has recently become prominent in the field of management due to its contributions to creativity. Daydreaming is an imaginative type of mind-wandering independent of the present task and environment that potentially facilitates the generation of new ideas and recall of work-related goals and problems by allowing for mental time travel. This study was conducted in two stages to investigate the concept of daydreaming, discuss daydreaming in the organisational context, examine its relationship with creativity, and examine the current status of daydreaming behaviour in organisations. In the first stage, we performed a narrative literature review of daydreaming to explore its evolution in the literature and synthesise the published research in this field of study. In the second stage, we collected survey data from 277 white-collar employees from various sectors and departments to conduct a descriptive analysis and examine the distribution of daydreaming behaviour in different departments, sectors, firm age and size, and employee experience. Finally, we combine and synthesise our literature review with descriptive analysis results to compare and complement the theoretical information on daydreaming with the descriptive dispersion of daydreaming in business life and explore new research avenues.

Keywords   Daydreaming · Narrative Literature Review · Descriptive Analysis

Daydreaming at work: an overview of the literature and a descriptive analysis

Daydreaming is a concept that is frequently discussed in the psychological literature. However, its importance has recently been extended into organisational studies since daydreaming potentially affects creativity, problem-solving, and emotional regulation (Baer, Dane and Madrid, 2021; Poerio, Totterdell, Emerson and Miles 2015). Daydreaming is defined as a specific type of mind-wandering that is independent of the present environment and current task (Baer et al., 2021; Poerio and Smallwood, 2016). Mind wandering is a psychological condition in which an individual's thoughts are disconnected from the present occurrences (Dane, 2018; Baer et al., 2021). People are mind-wandering in 50% of their waking time (Killingsworth and Gilbert, 2010). In previous studies, daydreams are usually equated with mind-wandering or have the exact definition (Newby-Clark and Thavendran, 2018). Newby-Clark and Thavendran (2018) examined the conceptual confusion between daydreaming and mind-wandering and clarified the distinction between them by suggesting that daydreaming should be defined as imagining events. For example, when a person's mind is wandering, it passes from one thought to another, whereas a person who is imagining an event (daydreaming) does not pass from thought to thought (Newby-Clark and Thavendran, 2018). Although mind wandering includes off-task thoughts, it is not concerned with the nature of the thoughts (Newby-Clark and Thavendran, 2018).

We follow Baer et al.'s (2021) and explain daydreams as a specific type of mind wandering. Daydreams include concentrating on internal images and thoughts (Chefetz, Soffer-Dudek and Somer 2023). They usually occur during deep attention absorption (Chefetz et al., 2023). Daydreaming might be considered an active process independent from the present occurrences, including self-generated thoughts that focus on goals beyond the present (Poerio and Smallwood, 2016; Baer et al., 2021). Previous studies have examined various types of daydreams and highlighted many types of daydreams and their diverse outcomes. Daydreaming is a two-way concept that has both positive and negative effects on job performance (Merlo et al., 2020). Baer et al. (2021) emphasised that if the job does not require creativity and the employee has low professional identification, daydreaming will not significantly benefit performance. However, because daydreaming contributes to the development of new ideas and prospective and problem-oriented thinking, the contributions of daydreaming should be examined, especially in jobs that require creativity and innovation (Sun et al., 2022). Considering the increasing importance of daydreaming in organisational behaviour, we identified a need to describe and summarise different types of daydreaming and the empirical evidence on antecedents and outcomes of daydreaming to increase and encourage future studies on daydreaming in management and organisational behaviour studies. In this respect, we first conducted a narrative literature review by addressing the following three initial review questions:

1. What are the different types of daydreaming in the psychology and management literature?

2. What are the antecedents of different types of daydreams in psychology and management domain?

3. What are the daydreaming outcomes in the psychology and management domain?

To answer these questions, a narrative literature review is an appropriate and comprehensive way of identifying, explaining, and synthesising the literature. We selected a list of criteria for article selection. We reached a final list of 127 articles from the Web of Science and SCOPUS databases that were eligible for further analysis. In addition to our literature review, we propose a descriptive study on daydreaming at the workplace to offer insights into the current state of daydreaming in organisations, business sectors,

and units with higher daydreaming rates. In this sense, we adopted Baer et al.'s (2021) operationalisation of problem-oriented daydreaming and bizarre daydreaming and calculated mean scores of problem-oriented and bizarre daydreaming across different departments, sectors, company age, company size, and employee experience. Despite intense interest in daydreaming in psychology literature, its various forms in the work context, such as problem-oriented and bizarre daydreaming, have received limited attention in organisational settings. The extant management literature has inadequate studies examining how these forms of daydreaming differ across departments, sectors, and employee characteristics. Given their role in boosting creativity, problem-oriented and bizarre daydreaming should be examined more deeply in the organisational context. Therefore, we present exploratory insights into the dispersion and daydreaming tendencies in different organisational contexts. These descriptive results may form the basis for future statistical analyses and the development of hypotheses by identifying potential patterns of problem-oriented and bizarre daydreaming in various organisational and employee characteristics. In this respect, the main objectives of our study are to examine the subject of daydreaming in-depth, distinguish different types of daydreaming, clarify the antecedents and consequences of daydreaming, examine the role of daydreaming in organisations, and pave the way for organisational research in this area.

Study 1: Literature Review

Methodology

In the first study, a narrative literature review to analyse the evolution of the concept of daydreaming in the literature. The narrative literature review aims to synthesise previous research on daydreaming (Marco-Lajara, Zaragoza-Sáez, Falcó, and Millan-Tudela, 2022). Narrative literature review has a more flexible approach than systematic reviews and, therefore, does not designate to generalise the results obtained to the population. However, a narrative literature review is helpful in providing a detailed interpretation and explanation of the literature, which facilitates a better understanding of the study field (Marco-Lajara et al., 2022; Baumeister and Leary, 1997).

We followed the stage indicated by Wee and Bannister (2016) to conduct a literature review consisting of topic selection, source selection, reading, and topic writing. First, to identify appropriate literature on daydreaming, we used the keyword "daydream*" in the Web of Science search. We determined some criteria for selecting articles to include in our review to ensure a comprehensive literature identification and selection process. We limited our search to articles with the title "daydreaming." In addition, we limited the field of study to include Web of Science categories of management, business, psychology multidisciplinary, psychology-clinical, psychology experimental, psychology social, psychology, psychology psychoanalysis, psychology applied, psychology-developmental, psychology educational, and psychology biological. Second, in the screening stage, we included articles that are compatible with the following criteria:

1. **Field of study:** Field of study: Management, Business, Psychology Multidisciplinary, Psychology-Clinical, Psychology Experimental, Psychology Social, Psychology, Psychology Psychoanalysis, Psychology Applied, Psychology-Developmental, Psychology Educational, Psychology Biological

2. **Type of article:** Articles and Review articles

3. **Timeframe:** In order not to exclude pioneer articles, we did not put a restriction on the year.

4. **Relevance:** We chose to limit our review sample to articles that only have "daydreamed*" keyword in their title.

5. **Language:** English

6. **Sample:** We included articles that examined non-clinical samples.

During this process, 94 studies that did not meet one or more of the above criteria were eliminated. Finally, we screened all of the article's titles and abstracts of the articles and omitted all irrelevant studies. As a result, we obtained 81 articles from Web of Science. The content evaluation of the articles was performed manually.

Following the same criteria, the SCOPUS database was also searched. However, we manually examine SCOPUS articles one by one to select articles not previously added during our Web of Science search. As a result, after eliminating 198 recurring and irrelevant 198 articles, we obtained 46 articles from the SCOPUS database adhering to the criteria that we have determined. Finally, 127 articles were obtained from the Web of Science and Scopus databases. We only included the Web of Science and SCOPUS databases in our study due to their collection of high-quality articles.

Findings

The Historical Evolution of Daydreaming

The notion of daydreaming was first mentioned by William James in his influential book The Principles of Psychology (1890) as a dominant aspect of our consciousness absorbed in fantasy when we engage in little metacognition, which laid the foundation for wide-ranging studies on daydreaming by pioneering daydreaming researcher Jerome Singer in psychology literature (Pisarik, Rowell and Currie, 2013).

Jerome L. Singer, a pioneering researcher of daydreaming, revived the study of consciousness, daydreaming, and imagination, notably with his 1966 book "Daydreaming: An Introduction to the experimental study of inner experience," which paved the way for the investigation of daydreaming in the broader context in the following years. Innumerable studies have investigated the relationship of daydreaming with human cognition, creativity, and emotion regulation. Singer also made a key contribution to this field of study by developing the well-known and frequently used daydreaming scale "Imaginal Processes Inventory."

Early research had a clinical perspective on mind wandering and explored the description and influences of the content of daydreams (Klinger, 1971). Jerome L. Singer, Leonard M. Giambra, and Eric Klinger became prominent in daydreaming research by forming the groundwork in this field of study by performing pioneering and highly-cited studies. Although some prior research has argued that daydreaming, a specific type of mind wandering, causes loss of attention and therefore has negative consequences in terms of performance, it is also frequently emphasised that it can contribute significantly to creativity. (Baer et al., 2021, Baird et al., 2012; Zedelius, Protzko, Broadway, and Schooler, 2021). Journals that published the most articles on daydreaming were Conscious Cognition, Imagination, Cognition and Personality, Perceptual and Motor Skills, Current Psychology, Frontiers in Psychology, Journal of Vocational Behaviour, and Journal of Clinical Psychology.

Demographics of Daydreamers

Earlier studies have frequently investigated the demographic features of daydreaming. Wagman (1967) found that the content of women's daydreams tends to be more related to planning and practicality, whereas

men tend to have daydreams with assertive and heroic content. In addition, women had more daydreaming and nightdreaming recurrence and emotional responses to daydreaming, in addition to more problem-solving daydreams (Giambra, 1980).

Giambra (2000) demonstrated that younger adults tend to have more future-oriented daydreams than older adults, and age influences temporal settings. Positive emotions in daydreams decrease with age (Giambra, 2000). When income, educational level, and general socioeconomic level increase, people see daydreaming as more positive, pleasant, and valuable and have more positive daydreams (Giambra, 1981). Therefore, the content of daydreams has been found to be associated with the level of education, length of education, and socioeconomic background (Giambra, 1981). (Giambra, 1974) found that daydreaming frequency and absorption in daydreaming, daydreams having future temporal contexts, emotional responses, mental images, bizarre content, achievement, heroism, hostility in daydreams, guilt, and fear of failure decreased linearly with age. However, the acceptance of daydreams, curiosity, mental activity rate, time-related content, and problem-solving in daydreams did not decrease with age. Daydreams with problem-solving content prevailed at every age except for the youngest (17-23 age).

In a nutshell, we observe that daydreams tend to be more positive and pleasant in younger people and people with high income and educational levels. However, some daydreaming content features, such as problem-solving daydreams and temporal settings, do not decrease with age. In earlier studies, daydreaming content was also observed to differ based on gender.

Types of Daydreaming

Daydream is considered an umbrella term that includes various types of thought in different content, affective tones, and styles of thinking (Zedelius et al., 2021; Zedelius and Schooler, 2016). Dane (2018) identified three broad types of mind-wandering content: current concerns, recalling the past, and fantastic possibilities. Mind-wandering can also be categorised depending on emotion and stress. Specifically, wandering thoughts might be based on whether they are problem-focused or emotion-focused (Dane, 2018). Daydreams are also distinguished according to affect and awareness; they can be pleasant and unpleasant, and the daydreamer can be aware or unaware that they are daydreaming. In addition, there is a distinction between spontaneous and deliberate daydreaming (Zedelius et al., 2021).

Three broad types of daydreams are commonly addressed in the literature (Zedelius and Schooler, 2016):

1. Positive constructive daydreaming, which involves favourable thoughts, lively images, planning, and curiosity.

2. Guilty-dysphoric daydreaming, including undesirable emotions such as fear, guilt, and anger.

3. Poor attentional control, which comprises quick and short daydreams and a problem in concentrating on internal or external events.

Positive-constructive daydreaming is defined as enjoyable and mesmerising daydreams including intense mental imagery, usually hinging on future plans and creative ideas (Zedelius et al., 2021). Positive-constructive daydreaming is firmly related to individual development, sense of meaning and positive emotions (Blouin-Houdon and Zelenski, 2016). Positive-constructive daydreaming has been found to be positively related to openness (Big Five personality factor), and guilty-dysphoric daydreaming has been shown to be related to neuroticism and negative emotionality (Zhiyan and Singer, 1997). Guilty-dysphoric daydreaming pertains to shame and guilt, fear of failure, and wish for bravery and accomplishments

(Zedelius et al., 2021). It revolves around negative emotions, depressive symptoms, and weaker psychological well-being (Blouin-Houdon and Zelenski, 2016). Individuals with a high frequency of guilt daydreaming indicate that their daydreaming usually focuses on adverse events (Williams and Vess, 2016). Poor attentional control is encapsulated as recurrent daydreaming along with proneness to boredom and distractability (Zedelius et al., 2022). Hartmann et al. (2003) suggested that the emotional state during daydreaming is an essential element in predicting the content of daydreams, and daydreams occurring during intense emotions tend to reflect emotions and be more dreamlike and symbolic.

Work-Related Daydreams.   As mind wandering is identified by a dearth of attention and experiential processes such as emotion regulation and stress, understanding mind wandering at work is beneficial to understanding these experiential work processes (Merlo, Wiegand, Shaughnessy, Kuykendall and Weiss, 2020). The cognitive, motivational, and emotional experiences of workers might influence mind wandering. According to the content and context regulation hypothesis, the influence of mind wandering on employee behaviour might be positive or negative depending on its content and context (Ibaceta, Holman and Niven, 2024). Thus, the content and context are fundamental to understanding mind wandering's consequences. Baer et al. (2021) classified daydreams into two types depending on their content: problem-oriented and bizarre daydreaming. Problem-oriented daydreams consist of imaginative thought that is inspired by or associated with individuals' daily problems (Baer et al., 2021). These daydreams can lead to the cultivation of new ideas and solutions for the associated problems (Baer et al., 2021). Bizarre daydreaming encompasses imaginative thoughts, including fantastic possibilities that are not connected to current problems or challenges (Baer et al., 2021). Problem-oriented daydreaming is directly related to creativity, and bizarre-oriented daydreaming is indirectly related to creativity through professional identification (Baer et al., 2021). Baer et al. (2021) found that cognitively demanding work leads to both problem-oriented and bizarre daydreaming.

Helin, Dahl, and Guillet de Monthoux, (2022) indicated that making dreams come true in organisational life requires people "to dream-making"; thus, new beginnings can emerge. Nowadays, there is pressure in organisations to work efficiently, and the focus is on the completion of tasks; therefore, daydreaming is considered inefficient or inactive. However, Helin et al. (2022) explained that daydreaming is a generative action and underlined the capacity to create 'memories of the future' in the present through the act of daydreaming.

Merlo et al. (2020) emphasized that three internal states lead to the stimulation of a daydream: positive or negative emotions, feeling overloaded by stressors, and boredom at work. Visual and auditory external cues can also prompt the beginning of a daydream. Moreover, certain work situations, such as meetings and breaks, may increase the possibility of daydreaming occurrences. When the task requires few cognitive resources, this might also promote the beginning of a daydream (Merlo et al., 2020). In high-load tasks, mind wandering at work can be detrimental, but it can also be beneficial as a source of entertainment when used as a micro-break (Merlo et al., 2020).

Merlo et al. (2020) highlighted the beginning, termination, and perceived workplace outcomes of a mind-wandering episode. The prompts that might initiate mind wandering are classified as internal, external, and situational. Internal prompts include internal states that facilitate the beginning of mind wandering, such as emotional states and boredom at work. External prompts comprise visual or auditory stimuli, and situational prompts might involve work meetings or break times (Merlo et al., 2020).

Although most prior research examined mind wandering as a detrimental phenomenon at work, Merlo et al. (2020) proposed that mind wandering can be perceived as helpful in some situations. First, it has

been suggested that people with reasonable cognitive control can mind wander strategically and can let their mind wander more often when the task demands are low, and they can use mind wandering's benefits without having performance decrease. Merlo et al. (2020) underlined that this strategic mind wandering might be a skill that can be trained to enhance work efficiency. According to the context and content regulation hypothesis, individuals not only become aware of their mind wandering, but they can also control their mind-wandering behaviours. Similarly, Singer and Pope (1981) discussed the similarities between daydreaming and self-hypnosis and emphasized that gaining control of attention shifting might enable us to control our thought stream. Guided daydreaming techniques, for example psycho-imagination therapy, might be used to cause changes in cognitive behaviour (Brannigan, Shahon and Schaller, 1992). Therefore, it has been emphasised that if mind wandering can be used strategically, it can be used as a beneficial micro-break since it helps to cognitively and affectively disconnect from the demands at work (Merlo et al., 2020). Second, Merlo et al. (2020) also emphasised that individuals feeling guilty after mind-wandering episodes work harder to make up for their time spent in mind-wandering, which is another beneficial impact of mind-wandering. Third, mind wandering can also be used as a micro-break to avoid an aversive work environment. Moreover, in the work context, Pisarik et al. (2013) examined the daydreams of undergraduate college students using an exploratory qualitative research methodology and underlined that daydreams can be used as a career assessment technique. They indicated that work-related daydreams could be used as an effective method to understand individuals' work-related goals and values in a more detailed way than traditional quantitative career evaluation techniques. Similarly, Morgan and Skovholt (1977) highlighted a positive career-related outcome of daydreaming by suggesting that spontaneous and guided fantasy and daydreaming might be helpful in career planning and career counselling as they allow for a higher share of feelings and enable contact with oneself that is mostly suppressed.

Digital Daydreaming. Berntsen, Hoyle, Munkholm Møller, and Rubin (2023) introduced the spontaneous smartphone checking scale as digital daydreaming, defined as the inclination to focus on one's smartphone, in the absence of a prior external stimuli and without any precise conscious goals in mind. The spontaneous smartphone checking scale was used to measure the inclination to focus on one's smartphone. The digital daydreaming scale is distinguished from daydreaming and mind-wandering measures because it does not load on factors associated with self-consciousness, reflection, and rumination but loads on a dimension related to digital communications and social media public image concerns (Berntsen et al., 2023). Another feature that distinguishes digital daydreaming is that people are immersed in their thoughts and memories when they are daydreaming. However, when people check their smartphones spontaneously, they are immersed in a virtual world.

Daydreaming in Marketing Scholarships. In marketing scholarship, daydreaming is addressed as a source of imaginative pleasure in customers when they are romanticising goods and turn places of consumption into magical places (Heath and Nixon, 2021). In this context, Heath and Nixon (2021) underline that fantasising might play an important role in influencing customer decisions.

Löfgren (2008) highlights the importance of tourists' daydreaming experiences and creating spaces for daydreaming in towns. Löfgren (2008) suggests that tourist experiences provide rich alternatives for daydreaming related to the lives of the strangers tourists see in their surroundings, which allows for much time spent daydreaming on touristic trips.

Social Daydreaming. When the content of daydreams includes other people, it is referred to as social daydreaming. In Kajimura, Nozaki, Goto, and Smallwood's study (2022), daydreaming that includes social

content is defined as social daydreaming, whereas daydreaming involving all kinds of content is defined as general daydreaming. Social daydreaming leads to higher life satisfaction and is associated with social well-being (Kajimura et al., 2022). Social daydreaming positively affects socio-emotional well-being, especially loneliness (Poerio et al., 2016). Mar, Mason and Litvack, (2012) demonstrated that although loneliness was related to more social daydreaming, only the propensity to daydream about close others is related to higher socio-emotional well-being. This finding underlines that only daydreaming about close others confers a socio-emotional benefit, whereas daydreaming about non-close other people predicts more loneliness (Mar et al., 2012). Poerio et al. (2016) highlighted the significance of social daydreaming in cultivating socio-emotional adjustment to an important life event. Social daydreaming also leads to a stronger perception of connection, love, and belonging compared to non-social daydreamers (Poerio et al., 2016). Social daydreaming has been found to cultivate heightened happiness, love, and connection only when the participants have inadequate feelings of love and happiness before daydreaming and when daydreaming contains people with whom the daydreamer has a quality relationship (Poerio et al., 2015). Thus, social daydreams facilitate emotion regulation, and imagining close others satisfies daydreamers' emotional needs by boosting positive feelings about themselves and others.

Prosocial Daydreaming. The propensity to daydream about helping others and prosocial characteristics and behaviours is examined as prosocial daydreams (Kearns, Tyler and Graziano, 2021). Kearns et al. (2021) showed that prosocial fantasising might increase empathy, which in turn might improve individual's prosocial disposition and helping behaviour.

Immersive Daydreaming. Immersive daydreaming is a type of daydreaming in which people are highly absorbed in pleasant mental content associated with a heightened sense of presence, kinaesthesia and vulnerability to evocative music (West and Somer, 2020). Immersive daydreaming usually involves convoluted fantasies, unrealistic scenarios, and imaginary characters (Somer Abu-Rayya and Brenner, 2021).

Maladaptive Daydreaming. Maladaptive daydreaming is defined as a dysfunctional mental activity described by extreme fantasy absorption (Mancinelli, Spisto, Sukhija and Salcuni, 2024). Maladaptive daydreaming is a pathological type of immersive daydreaming that leads to stress and detriment to social interactions and work life (Somer, 2002). Maladaptive daydreamers describe it as an addictive behaviour (Soffer-Dudek, Somer, Abu-Rayya, Metin and Schimmenti, 2021). Maladaptive daydreaming has been found to lead to distress, lower quality of life, poorer resilience, and difficulties in emotional regulation (Pietkiewicz, Hełka, Barłóg and Tomalski, 2023; Chefetz et al., 2023).

Daydreaming and Creativity

One of the earliest works, Singer and Schonbar (1961) indicated that daydreaming is related to creative exploration and expression. Indeed, the daydreamer's imagination is uninterrupted by environmental stimuli during daydreaming; therefore, daydreams might facilitate new mental associations, images, and ideas (Zedelius and Schooler, 2016). Similarly, Shepard (1978) and Flowers and Garbin (1989) indicated that daydreaming promotes the generation of new mental associations, which might lead to creativity. Furthermore, some previous studies showed that daydreams positively influence creativity (Baird et al., 2012; Baer et al., 2021).

Various prior studies have demonstrated that daydreaming and mind-wandering are positively associated with creative outputs, mostly stemming from mind wandering's positive effect on incubation (Baird et al., 2021; Zedelius and Schooler, 2020). Working on a problem, taking a break, and returning to the problem,

which is termed incubation, boosts creativity (Zedelius et al., 2020). In this context, Baird et al. (2012) found that engaging in a simple task that allows for mind wandering and returning to a previous problem facilitates creative problem-solving. Wallas's "incubation" stage in the creative production process, which consists of taking a break from the problem, engaging in unrelated thoughts, and returning attention to the previous problem, has been found to increase creativity (Baird et al., 2012). Baer et al. (2021) found that problem-oriented daydreaming is directly related to creativity, and the connection between bizarre daydreaming and creativity completely depends on professional identification. In addition, positive-constructive daydreaming has also been found to be positively related to openness to experience, a trait strongly associated with creativity (Zedelius et al., 2021).

Zedelius and Schooler (2016) suggest that since there are different styles of daydreaming (in terms of content, affective tone, and style of thinking), the relationship between daydreaming and creativity might differ according to an individual's mood, intentionality, style of thinking, or content of daydreaming. In this respect, Zedelius et al. (2021) found that personally meaningful daydreaming leads to self-reported creative behaviour and daily inspiration. Fantastical daydreaming also anticipates creative writing quality and day-to-day creative behaviour (Zedelius et al., 2021). Somer (2024) emphasized that music might catalyse creativity in the context of maladaptive daydreaming.

Antecedents of Daydreaming

Prior work yielded extensive and complicated results in terms of daydreaming antecedents. Different types of daydreaming, characterised by different content, may have different antecedents. Blouin-Houdon and Zelenski (2016) revealed that introspection is an antecedent of positive-constructive and guilty-dysphoric daydreaming styles (Blouin-Houdon and Zelenski, 2016). Baer et al. (2021) found that work that is cognitively demanding evokes problem-oriented and bizarre daydreaming. Martarelli Mayer and Mast (2016) found that happy music was related to more positive daydreams that were connected to relaxation. Attendance to an intensive stress-reduction program increases achievement-oriented daydreams among women mental health workers (Mehr, Senteney and MacCreadie, 1994). Teague and Gold (1981) found that daydreaming is reactive to self-monitoring, which enables individuals to draw more attention to their daydreams. They also found that self-monitoring leads to increased attention to daydreaming, and this process might be enhanced if individuals have a positive attitude towards daydreaming (Teague and Gold, 1981). Gold and Cundiff (1980) found that giving positive information about daydreaming increased the occurrence of self-reported daydreaming activity among undergraduates. Gold and Cundiff (1980) explained that two interpretations might be offered for this finding: the first explanation is listening to positive information about daydreaming might have enabled them to pay more attention to their daydreams and their train of thought, and the second explanation is that the number of their daydreams might have actually increased.

Some studies have investigated how daydreaming episodes begin. Gold and Reilly (1985) underlined that daydreams are usually initiated when environmental demands are low or absent and when external stimulation is familiar. Similarly, Singer (1966) emphasized that attention is divided into internal and external stimulation. Therefore, daydreams are expected to occur when a task that requires minimal attention to external stimulation is selected. Merlo et al. (2020) highlight that individuals use mind-wandering, whether deliberately or not, to escape from an unpleasant environment to a more favourable daydream. In addition, daydreams are initiated as a result of negative emotional states, positive affect, boredom, meetings, and increased task demands (Merlo et al., 2020). Also, Gold and Cundiff, 1980) showed that providing information about daydreams might increase daydreaming.

Some authors associated daydreaming with several personality traits. For instance, Langens and Schmalt (2006) discovered that people with a strong fear of failure who had frequent positive daydreams related to achieving personal goals showed higher degrees of depression and confusion. In addition, Harriott, Ferrari, and Dovidio (1996) found that indecision was significantly related to daydreaming and distractibility. Stress has been found to be an antecedent of maladaptive daydreaming, and mindfulness can alleviate the adverse effects of stress on maladaptive daydreaming (Pham and Pecherkina, 2024).

Two competing hypotheses have been proposed regarding how people's abilities to change and revise thoughts and behaviours (executive processes) might govern their mind-wandering tendencies (Marcusson-Clavertz, Cardeña, and Terhune 2016). The first hypothesis, the control-failure hypothesis, indicates that mind wandering is interpreted as an attentional breach that usually occurs in people with low executive resources. On the other hand, the global availability hypothesis emphasizes that mind wandering entails executive resources, and an excess of these resources might lead to more recurrent mind wandering. Previous findings yield contrasting results by supporting both hypotheses (Marcusson-Clavertz et al., 2016). In this sense, these two hypotheses might be harmonised by taking into account the context of the immediate task and mind-wandering content when assessing the connection between executive processes and mind-wandering.

Outcomes of Daydreaming

Daydreaming has a detrimental impact on reading comprehension, sustained attention, and memory (Poerio and Smallwood, 2016; Mooneyham and Schooler, 2013). Individuals tend to suppress their daydreams when they know that a report of daydreams will be examined, as daydreams are usually viewed as undesirable and inappropriate (Filler and Giambra, 1973). Moreover, a more difficult memory task reduced the amount of reported daydreaming (Filler and Giambra, 1973). Although Delaney, Sahakyan, Kelley, and Zimmerman (2010) showed that daydreaming that is unrelated to the current moment predicts more forgetting because it leads to a higher contextual shift, Otgaar et al. (2016) could not find any significant memory-undermining effects of daydreaming. On the other hand, daydreaming might benefit future planning, creativity, and problem-solving (Poerio and Smallwood, 2016). Baer et al. (2021) found that although problem-oriented daydreaming directly relates to creativity, the connection between bizarre daydreaming and creativity completely depends on professional identification (Baer et al., 2021). Also, without professional identification, problem-oriented and bizarre daydreaming negatively relates to performance (Baer et al., 2021). On the other hand, Trivedi and Pattusamy (2022) found that problem-oriented daydreams mediate the relationship between performance pressure and innovative work behaviour among Indian academics. Therefore, we might deduce that although problem-oriented and bizarre daydreaming's influence on performance might vary depending on other variables, they potentially contribute to creative and innovative thoughts.

Previous studies have reported that some personality characteristics might be associated with daydreaming. For instance, Kearns et al. (2021) found that people with prosocial characteristics (e.g., empathic concern, fantasy/fictional empathy, moral reasoning) have a propensity to fantasise about prosocial behaviour, and these traits are connected with heightened helping behaviours. In addition, higher mindfulness showed a positive connection between daydreaming (measured by a creative experiences questionnaire) and life satisfaction (Sugiura and Sugiura, 2020).

Many studies have underlined that the content of daydreams might determine the daydreaming outcomes. Langens (2002) underlined the important role of positive daydreams in the motivational process by demonstrating that positive daydreaming is a mediator between goal commitment and goal attainment for people having strong achievement motivation. As daydreams represent future possibilities, they are

assumed to support long-term goals and maintain motivation for goal striving (Langens, 2002). Positive-constructive daydreams produced stronger feelings of authentic living and weaker feelings of true self-alienation (Williams and Vess, 2016). Touchton and Magoon (1977) found that the most recent daydream and a summary of daydream codes were predictors of academic major, and the most recent daydream was the best single predictor of vocational plans. Therefore, Touchton and Magoon (1977) demonstrated that occupational daydreams can be utilised to anticipate women's occupational selections.

Table 1 present the summary of antecedents and outcomes of daydreaming types, and Table 2 presents a summary of contextual conditions and outcomes of daydreaming at work.

Table 1

Summary of the Antecedents and Outcomes of Daydreaming Types

Positive-Constructive Daydreaming		Guilty-Dysphoric Daydreaming	
Antecedents	**Outcomes**	**Antecedents**	**Outcomes**
Introspection and Openness to experience, curiosity, happy music, and low environmental demands	Future planning, creativity, and higher feelings of authentic living, Lower feelings of self-alienation and attentional cycling	Actual-ideal self-discrepancy, Neuroticism (involving low sef-esteem, depression, high sensitivity to negative emotions), introspection	Unpleasant emotions, Guilt, fear of failure, lower autonomy, lower positive relationships with others, and lower life satisfaction
Poor Attentional Control		**Maladaptive Daydreaming**	
Antecedents	**Outcomes**	**Antecedents**	**Outcomes**
Low conscientiousness, difficulty in focusing on internal and external factors	Decreased autonomy, decreased life satisfaction, and lower positive well-being	Poor emotional processing and maltreatment in childhood	Distress, lower quality of life, poorer resilience, and difficulties in emotion regulation
Problem-Oriented Daydreaming		**Bizarre Daydreaming**	
Antecedents	**Outcomes**	**Antecedents**	**Outcomes**
Cognitively demanding work	Creativity, innovative work behaviour	Cognitively demanding work	(Among professionally identified people) creativity

Table 2

Contextual Daydreaming Model

Initiation of a daydream at work		
Positive/negative emotions and stressors boredom, external stimuli, meetings/breaks ⟹ Daydreaming		
Antecedents Conditions	**Type of Daydreaming**	**Impact/Outcome**
Low task demands	Mind wandering general	Might be beneficial (e.g., Creativity, future planning)
High-load tasks	Mind wandering general	Might harm performance
Cognitively demanding work	Problem-oriented daydreaming	Directly impacts creativity (especially when professional identification is high)
	Bizarre daydreaming	Indirectly enhances creativity only when people strongly identified with their jobs
People lacking in professional identification	Problem-oriented and bizarre daydreaming	Lower performance
Employees who lack professional identification and those in jobs that do not require creative performance.	Problem-oriented and bizarre daydreaming	Daydreaming is unlikely to provide any benefits

Daydreaming and Memory

Mind wandering is related to the activation of the default brain network, which is also related to the recollection of past memories and future imagination (Zedelius and Schooler, 2020). However, the connection between mind wandering and memory yielded contrasting results depending on the type of memory, type of mind wandering, and the requirements of the current task. Mind wandering has been found to be negatively associated with working memory when measured in high-demanding task contexts; however, when it is measured in low-demanding tasks, there was a positive connection between working memory and mind wandering (Mrazek et al., 2012; Marcusson-Clavertz et al., 2016; Levinson, Smallwood and Davidson, 2012). The context regulation hypothesis explains these contrasting results by indicating that people limit the recurrence of their mind wandering to prevent performance impairment on the current task (Marcusson-Clavertz et al., 2016).

When mind-wandering related to the future and the self facilitates goal-oriented future events or improves subsequent mood, people with elevated executive resources might use their resources to sustain future-focused thinking when task demands allow it. In this respect, Baird et al. (2011) demonstrated that mind wandering regarding the future is positively associated with working memory capacity. Marcusson-Clavertz et al. (2016) found that working memory is positively related to mind wandering in individuals with a low negative daydreaming style but negatively in those with a high negative daydreaming style. Marcusson-Clavertz et al., (2016) showed that the content and context of mind-wandering episodes play significant roles in the connection between executive processes and mind-wandering.

Daydreaming and Personality

Daydreaming has been associated with various personality traits, mainly earlier studies in daydreaming literature. Singer and Antrobus (1963) found that the personality factor with the highest loading on daydreaming frequency included ruminative and obsessive thought but not of a psychopathological nature. Singer and Schonbar (1961) demonstrated that the frequency of daydreaming is associated with achievement fantasy, creative story-telling ability, stronger identification with mother and father, and richness of internal living. A significant and positive but low correlation was found between the discrepancy (between self and ideal self) and daydream frequency, offering some support for the Freudian theory of daydreams (Windholz, 1969).

In psychotherapy, daydreams are considered an instrument for understanding the patient and developing a therapeutic relationship (Gifford, 2014). Clinicians view daydreams as an opportunity to dive into a patient's unconscious. Gifford (2014) underlines that while people feel confident expressing their dreams, they might have a tendency to keep their daydreams more private because they are more possessive of them because daydreams occur when people are awake.

The content of daydreams reveals a person's qualities, such as goal pursuits, desires, and emotional response tendencies (Klinger, Murphy, Ostrem and Stark-Wrobiewski, 2004). Positive daydreaming has been found to mediate between goal commitment and goal attainment for individuals with high achievement motivation (Langens, 2002). Brannigan, Hauk, and Guay (1991) showed that students with an internal locus of control were more engaged in achievement daydreaming and had less fear of failure daydreaming than those with an external locus of control. Additionally, individuals with an external locus of control have been demonstrated to have more past-oriented daydreams (Brannigan et al., 1992). Gold and Minor (1983) discovered that students with higher-grade point averages are more likely to have happy and prosperous

daydreams and fewer failure daydreams. Harrison and Singer (2010) found a positive relationship between having thin boundaries of mind and daydream bizarreness. Boundaries of the mind divide states of consciousness, leading to a separation between dreaming and reality. People with thick boundaries of mind reported few instances of having nightmares and tend to prefer concreteness and order, whereas people with thin boundaries have better fluidity and communication between different aspects of the self (Harrison and Singer, 2010).

Positive and negative emotionality are also important factors associated with daydreams. Klinger et al. (2004) indicated that positive emotionality ruminative tendencies are associated with a sense of natural-ness about disclosing daydreams, while negative emotionality was related to adverse emotional reactions when disclosing daydreams. Therefore, Klinger et al. (2004) underlined that reactions to the disclosure of daydreams can thus be interpreted as a reflection of an individual's general personality. Depressed people report fewer positive-constructive daydreams (Gold and Reilly, 1985).

In summary, previous studies have demonstrated that personalities and positive or negative emotions are important factors that can determine the type of daydreams an individual might have. Positive emotions, internal locus of control, and high motivation for achievement resulted in more positive and beneficial daydreams.

Daydreaming Measurement

In daydreaming studies, quantitative studies strongly outweigh qualitative studies. Therefore, we listed the different scales used in daydreaming studies.

Imaginal Processes Inventory (IPI), a 344-item questionnaire, was designed to measure the internal mental life of people (Singer and Antrobus, 1963). Daydreaming Frequency Scale (DDFS) is one of the 28 scales constituting the Imaginal Processes Inventory, which is frequently used (Stawarczyk et al., 2012).

Huba, Aneshensel, and Singer, (1981) developed a shorter variant of IPI, namely the Short Imaginal Processes Inventory (SIPI), to test three significant factors of daydreaming and inner experience: Positive-constructive daydreaming (e.g., intense images, positive reactions, and future-orientation), guilt/fear-of failure (e.g., fearful and anxious reactions, achievement-oriented and adverse content), and poor attentional control (distractibility, mind wandering, and vulnerability to boredom) (Huba and Tanaka, 1983).

Somer, Lehrfeld, Bigelsen, and Jopp (2016) introduced the Maladaptive Daydreaming scale to evaluate maladaptive daydreaming tendencies. Baer et al. (2021) developed problem-oriented and bizarre daydream-ing scales to evaluate the daydreaming experience in the work context. Berntsen et al. (2023) introduced the Smartphone Checking Scale to assess the tendency to direct attention to one's smartphone without being stimulated by external cues and without any goal in mind aligned by mind wandering guided towards internal thoughts.

In addition to questionnaires, some studies examined daydreaming using qualitative techniques and experimental studies to gain a deeper understanding of personal experiences (Kearns et al., 2021; Merlo et al., 2020).

Study 2: Descriptive Analysis

Methodology

We collected web-based survey data from 277 white-collar workers in Istanbul and conducted a descriptive analysis to examine the dispersion of the mean score of problem-oriented and bizarre daydreaming by department, company age, company size, sector, and employee work experience. This study presents only descriptive statistics, and statistical significance is not assessed. Therefore, these analyses are not based on hypothesis testing but only aim to summarise the data.

To measure problem-oriented and bizarre daydreaming, we used a scale developed by Baer et al. (2021) and a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). A convenience sampling method with voluntary responses. We obtained consent from the participants and informed them that their answers would remain anonymous. Ethics committee approval was obtained for the tools and methods used in this research on September 30, 2024, by the Yıldız Technical University Ethical Committee.

We applied principal component analysis to purify the data. The KMO value was 0.855, indicating that our data were convenient for conducting factor analysis (Yaşlıoğlu, 2017). Factor analysis reveals the underlying factor structure of the expressions representing the scale variables (Yaşlıoğlu, 2017). When we performed the exploratory factor analysis extraction based on the eigenvalue, we found that our items were divided into two factors (problem-oriented and bizarre daydreaming), as expected. We also performed Cronbach's Alpha reliability test. For problem-oriented daydreaming, the Cronbach's alpha was 0,882; for bizarre daydreaming, it was 0,902.

Analysis Results

The frequencies of different groups in our data are shown in Table 3.

Table 3

Frequencies

Sector	N	Company Age	N	Number of Employees	N	Employee experience (year)	N	Department of Employees,	N
Service	199	0-10 year	56	0-250	101	0-1 years	68	Engineering	37
		11-20 year	67	251-1000	71	1-5 years	139	Marketing	40
Manufacturing	78	21-40 year	73	More than 1000	103	More than 6	70	Finance	27
		More than 40 years	81					HR	102

While analysing the departments of employees, only the four departments with the highest frequency were included in the analysis. Among different departments, the mean score of problem-oriented daydreaming of employees working in the engineering/design department is higher (4,96) than those working in marketing (4,57), finance/accounting (4,80), and human resources management (4,71). Therefore, the mean score of problem-oriented daydreaming is highest in engineering and lowest in HRM departments. Similarly, for bizarre daydreaming, the mean score of employees in the engineering and design departments (3,67) is higher than in marketing (3,57), finance/accounting (3,23), and human resources management (3,34). Although the mean score for problem-oriented daydreaming is high in the finance/accounting department, the mean score for bizarre daydreaming is observed to be the lowest compared to other departments.

According to our results, the mean score of problem-oriented daydreaming is higher in the manufacturing sector (4.72) than in the service sector (4.60). However, the service industry has a slightly higher mean score for bizarre daydreaming (3,52) than the manufacturing sector (3,35).

We divided the employees into three groups: 68 employees with 0-1 years experience, 139 employees with 1-5 years experience, and 70 employees with 6 years or more of experience. The mean of problem-oriented daydreaming was 4.66 in those with 0-1 years of experience, 4.67 in the group with 1-5 years of experience, and 4.55 in the group with six or more years of experience. Accordingly, the mean problem-oriented daydreaming is higher in less experienced and most likely younger employees. The mean score for bizarre daydreaming is 3,41 for employees with 0-1 years experience, 3,49 for people with 1-5 years experience, and 3,21 for people with 6 years or more of experience.

When classified in terms of the average number of employees in a company, firms with more than 1000 employees have the highest mean score of problem-oriented daydreaming (4,88), followed by firms with 0-250 employees (4,51) and firms with 251-1000 employees (4,47). For bizarre daydreaming, firms with 0-250 employees have the highest mean score of problem-oriented daydreaming (3,49), followed by those with more than 1000 employees (3,43) and 251-1000 employees (3,26).

When classified by company age, we observe that the mean score of problem-oriented daydreaming is higher in older companies (4,82 in companies with 21-40 years and 4,73 in companies with 40+ years) than in younger companies (4,35 in companies with 0-10 years and 4,57 in companies with 11-20 years).

Figure 1

Distribution of Problem-Oriented and Bizarre Daydreaming by Organisational Factors
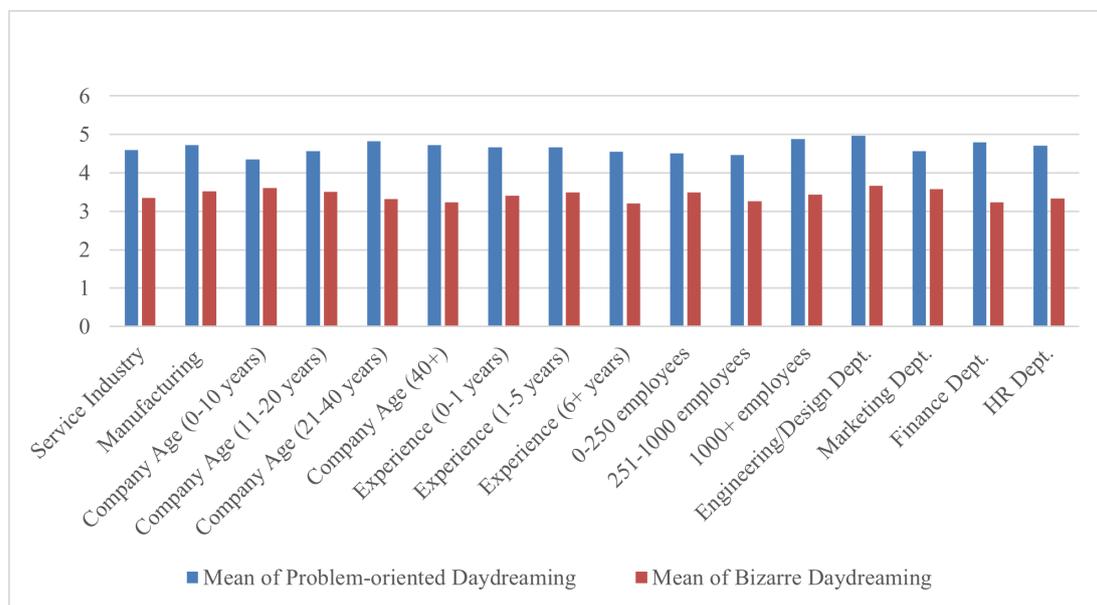
Discussion

Our literature review recognised that daydreaming is frequently examined at an individual level and mostly in psychological literature. Although some studies explored work-related daydreaming (Baer et al., 2021; Pisarik et al., 2013), there is an inadequacy in the number of studies that demonstrate the consequences of daydreaming in organisations. Almost half of waking hours are spent mind wandering, which has benefits such as reminding people of unfulfilled goals and providing them with imaginative ideas (Baer et al.,

2021). Therefore, we acknowledged the need for more studies about daydream's positive consequences in organisations in this study.

Literature review results demonstrate that daydreaming has been a concept frequently examined in psychology literature since the 1960s, with the pioneering preliminary works of William James and Jerome Singer. We observed that earlier studies from the 1960s to the 2000s mostly explored the demographic features of daydreaming behaviour. Jerome L. Singer laid the groundwork for daydreaming research with his pioneering 1966 book "Daydreaming: An Introduction to the experimental study of inner experience" and with the influential daydreaming scale that is still actively used today, the Imaginal Processes Inventory (IPI), which consists of three types of daydreaming: positive-constructive, guilty-dysphoric, and poor attentional control (McMillan et al., 2013). Leonard M. Giambra, another important researcher, examined the relationship between the content and frequency of daydreaming and demographic features such as age and gender. Early studies also investigated the connection between daydreaming and personality, attentional processes, emotions, and daydreaming behaviour among students. Moreover, extant research explored maladaptive daydreaming and analysed its negative consequences (Somer, 2002). After the year 2000, studies addressed daydreaming in the work context and explored its relationship with creativity and various performance outcomes in the workplace (Baird et al., 2012; Merlo et al., 2020; Dane, 2018; Baer et al., 2021). Positive-constructive daydreaming has been found to have positive outcomes such as creativity, future planning, and problem-solving (McMillan et al., 2013; Zedelius et al., 2021). Similarly, Baer et al. (2021) found that through professional identification, problem-oriented daydreaming directly relates to creativity at work and bizarre daydreaming is indirectly related to creativity. Furthermore, daydreaming has been investigated in various contexts, and its types have been enriched accordingly, such as digital daydreaming (spontaneous smartphone checking scale), social daydreaming, and prosocial daydreaming (Berntsen et al., 2023; Kajimura et al., 2022; Kearns et al., 2021) and the pathological form of daydreaming, namely, maladaptive daydreaming (Somer, 2002).

In our descriptive study, we observed that the engineering and design departments have higher mean scores for problem-oriented and bizarre daydreaming than other departments. Higher cognitive demands in engineering and design departments might cause this. Similarly, Baer et al. (2021) found that work that is cognitively demanding leads to problem-oriented and bizarre daydreaming. It has been previously suggested that increased task demands might facilitate the beginning of a daydreaming episode (Merlo et al., 2020).

We also found that the mean of problem-oriented and bizarre daydreaming was higher in employees with less experience. This finding is in accordance with previous findings indicating that daydreaming frequency decreases with age (Giambra, 1974). Giambra (1981) also showed that positive emotions in daydreams increase when age decreases. Therefore, younger people may have a more positive perspective on daydreams.

The mean score for problem-oriented and bizarre daydreams is higher in the manufacturing industry than in the service industry. There may be more routine-intensive jobs in the manufacturing industry, which may facilitate mind-wandering (Marcolin et al., 2016; Dane, 2018).

Similarly, the higher mean score of problem-oriented daydreaming in more prominent and older firms can be explained by the fact that the work might be more routine in these firms. The higher mean score of bizarre daydreaming in smaller and younger firms may be because smaller firms tend to encourage more creativity and flexibility.

Our descriptive analysis results support the previous findings. We aimed to observe the distribution of daydreaming behaviour in the work environment using descriptive statistics and interpreted these findings with previous findings obtained through a literature review.

Limitations and Prospects for Future Studies

Since daydreaming is not widely studied in management literature, we aimed to provide preliminary information on this subject and understand the general characteristics of the data to form the basis for future hypothesis tests. However, the fact that descriptive analysis does not involve causality is a limitation of our study. We encourage future studies to conduct more complex statistical analyses with a broader sample size.

Additionally, there are population differences between some of the groups (sector and employee experience) compared during our descriptive analysis, which may make it difficult to make a fair comparison between the groups and requires caution regarding the results' generalizability. Therefore, when interpreting the results, this unbalanced distribution should be considered and supported by more balanced samples when necessary.

Although previous studies have examined social and prosocial daydreaming, management literature does not adequately address these concepts. Social daydreaming has been found to influence life satisfaction and social well-being; therefore, future studies could examine its influence on employee behaviour and productivity. In addition, the effect of prosocial daydreaming on employees' helping behaviour and empathy can also be examined. Music has been found to produce creativity in maladaptive daydreaming (Somer, 2024), and happy music has been found to be related to relaxation (Martarelli et al., 2016). Thus, future studies can also explore the consequences of listening to music while working or taking a break at the workplace.

Practical Implications

We encourage managers to explain the benefits of daydreaming to employees and encourage employees to share their daydreams with their co-workers, even if it includes fantastic and bizarre opportunities or events, to cultivate and increase creativity. Gold and Cundiff (1980) found that giving positive information about daydreaming increased the recurrence of undergraduates' self-reported daydreaming activity. Managers might also encourage employees to have more creative daydreams. Previously, Long and Hiebert (1985) developed visualisation exercises that encouraged students to vividly imagine memories and let these images trigger further images. A similar exercise can be used to develop creative ideas in companies. Zedelius and Schooler (2016) highlight that creative people might engage in deliberate daydreaming to get inspiration, and that deliberate daydreaming involves more positive thoughts. In this context, Zedelius and Schooler (2016) argued that instructions that promote positive and interesting daydreams might lead to higher creativity. Similarly, we suggest that instructions or exercises aimed at generating deliberate and positive daydreams might boost creative ideas in the workplace. Positive-constructive daydreaming might be particularly beneficial at the workplace, as it has been found to serve as a motivational drive in goal pursuits (Langens, 2002). Additionally, in organisations that require innovative behaviour and creativity, managers should cultivate both problem-oriented positive-constructive daydreams (Baer et al., 2021; Sun et al., 2022).

However, despite the positive outcomes associated with daydreaming, such as future planning and creativity, attention shifts stemming from mind-wandering episodes at work might lead to detrimental

performance results, including compromised sustained attention, memory, and reading comprehension during daily activities (Merlo et al., 2020). Merlo et al. (2020) underlined that the costs and benefits of mind wandering might depend on job features and the immediate task. For example, in high-demanding tasks, mind wandering can be detrimental; however, it might be beneficial when the task demands are low. Additionally, cognitively demanding work can lead to problem-oriented daydreaming, which is a precursor to creativity (Baer et al., 2021).

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