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Nudging Goal Achievement: The Motivational Effect of Temporal Marking (Postprint)

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Abstract

Time markers refer to all salient and distinctive events in daily life. When individuals experience present time markers or anticipate future time markers, their level of motivation for pursuing goals is enhanced, and they exhibit increased goal-directed behaviors, indicating that time markers possess a motivational effect. Time markers may increase individuals' sense of separation between their temporal selves, subsequently enhancing goal-pursuit motivation through psychological processes such as self-efficacy, maintenance of a consistent self-image, loss aversion, and gap reduction. Future research should further examine the role positioning of time markers within the motivational effect and the duration of this effect, investigate the generalizability of the motivational effect of time markers, test potential psychological mechanisms, and conduct applied research on utilizing time markers to nudge behavioral decision-making in practical domains.

Full Text

Nudging Goal Attainment: The Motivating Effects of Temporal Landmarks

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Abstract: Temporal landmarks are defined as any distinct events that stand out in the everyday humdrum of life. When individuals experience a current temporal landmark or anticipate a future one, their levels of goal-pursuit motivation are enhanced, and they exhibit more goal-related behaviors—that is, temporal landmarks possess a motivating effect. Temporal landmarks may increase individuals' sense of psychological separation between different temporal selves, thereby enhancing goal-pursuit motivation through mental processes such

as self-efficacy, maintaining a consistent self-image, loss aversion, and discrepancy reduction. Future research should further examine the role positioning of temporal landmarks in motivating effects and the duration of these effects, investigate the generalizability of temporal landmarks' motivating effects, test potential psychological mechanisms, and conduct applied research on using temporal landmarks to nudge behavioral decision-making in practice.

Keywords: temporal landmarks; goal attainment; motivating effects; temporal self-appraisal; nudge

“Life without goals is like sailing without a compass.” Goals are crucial for self-improvement and realizing life values, which is why people are keen to set and pursue various objectives. Unfortunately, individuals often lack sufficient self-control and motivation to invest the time and effort required to achieve their goals (Milkman, Rogers, & Bazerman, 2008), leading to nearsighted decision-making. This is evident in repeated procrastination regarding weight loss, smoking cessation, and savings, which not only hinders personal development but may also contribute to serious social problems such as high obesity rates.

How can individuals overcome inertia and enhance their motivation to pursue and achieve goals? Most previous research has focused on situational factors, examining the issue from an external perspective (Sela, Berger, & Liu, 2008; Milkman, 2012; Touré-Tillery & Fishbach, 2012; Townsend & Liu, 2012), while paying less attention to internal incentives. Recently, scholars have noticed that certain naturally occurring time points—temporal landmarks—can motivate individuals to pursue and achieve goals by influencing their self-appraisal. These external events alter individuals' perception of time and self, subsequently enhancing their internal motivation. For example, people tend to pay more attention to aspirations or goals at the beginning of a new year (Norcross, Mrykalo, & Blagys, 2002), and research has found that individuals are most likely to consider their health issues and go to the gym on Mondays (Ayers, Althouse, Johnson, & Cohen, 2014). Consequently, starting a fitness plan on Monday is often more effective. These studies suggest that when individuals experience a current temporal landmark or anticipate a future one, their goal-pursuit motivation increases, making them more motivated and determined to pursue and achieve goals and take action (Dai, Milkman, & Riis, 2015; Li, 2018; Peetz & Wilson, 2014). This motivating effect helps improve individuals' inertia and enhance their self-control, thereby providing a nudge for goal pursuit and attainment.

Current research on the motivating effects of temporal landmarks remains fragmented. No systematic discussion has yet addressed which aspects of goal pursuit and attainment are motivated by temporal landmarks or what underlying mechanisms drive these effects. Therefore, this paper systematically elaborates on the motivating effects of temporal landmarks at both the goal motivation and goal behavior levels, proposes psychological mechanisms based on relevant theories, and identifies future research directions to provide new perspectives and insights for scholars.

1 Conceptual Connotation of Temporal Landmarks

The concept of temporal landmarks first emerged in memory research. In the 19th century, Ribot (1882) proposed in *The Diseases of Memory* that autobiographical memory consists of reference points, which he defined as events and states existing in individual consciousness whose temporal positions can be perceived (cited in Conway, 1990). Scholars generally regard these reference points as precursors to temporal landmarks. Subsequent research on autobiographical memory employed similar concepts such as personal reference systems (Kurbat, Shevell, & Rips, 1998; Robinson, 1986) to describe these events. Building on this foundation, Shum (1998) first introduced the term “temporal landmarks,” defining them as special time periods in people’s lives that contrast sharply with the seemingly trivial and endless stream of ordinary daily events. This early research primarily focused on the relationship between temporal landmarks and autobiographical memory.

As research expanded, the field of behavioral decision-making began incorporating temporal landmarks, defining them as all salient and distinctive events in daily life (Peetz & Wilson, 2013; Dai, Milkman, & Riis, 2014). These primarily include two categories: personal events and calendar reference points (Peetz & Wilson, 2013; Shum, 1998). The first category refers to events individuals personally experience and that hold significant meaning for them, such as “milestone ages,” life transitions, first-time experiences, and recurring scenes with regular significance (e.g., birthdays) (LeBoeuf, Williams, & Brenner, 2014; Robinson, 1986), which serve to mark personal history. The second category comprises reference points from socially constructed and shared schedules, such as Mondays, the first day of each month, New Year’s Day, the beginning of a semester, and secular and religious holidays (Kurbat et al., 1998; Robinson, 1986). Thus, temporal landmarks possess both personal attributes, influenced by individual traits and experiences, and cultural sharedness (Shum, 1998), shaped by cultural background, customs, religious beliefs, and professional identity. These studies extended the connotation of temporal landmarks beyond memory, adopting a more general and broader temporal perspective. Temporal landmarks not only influence how individuals recall memories and perceive time (Ahn, Liu, & Soman, 2009; Zaubergerman, Levav, Diehl, & Bhargava, 2010) and moderate intertemporal decision-making preferences (徐岚, 陈全, 崔楠, 陆凯丽, 2019), but also demarcate boundaries between different time periods that can be used to organize current activities and future plans (LeBoeuf et al., 2014; Soster, Monga, & Bearden, 2010; Tu & Soman, 2014).

2 The Motivating Effects of Temporal Landmarks

Goal pursuit and attainment constitute a continuous process. Gollwitzer (2012) posits that individuals experience two mindsets during this process: a deliberative mindset, characterized by planning and evaluation in information processing, which can be understood as the generation of goal motivation; and an implemental mindset, an action-oriented information processing mode charac-

terized by behavioral execution, which influences the generation of goal-related behaviors. Goal motivation and goal behavior represent the implicit and explicit dimensions of goal pursuit, respectively.

Recent research in judgment and decision-making has found that when individuals experience a current temporal landmark or anticipate a future one, their goal-pursuit motivation increases, accompanied by more goal-related behaviors (Dai et al., 2014, 2015; Peetz & Wilson, 2013). The following sections summarize relevant empirical research on the motivating effects of temporal landmarks at both the goal motivation and goal behavior levels.

2.1 Motivating Effects on Goal Motivation

Goal motivation is an indispensable component of goal pursuit, explaining why individuals pursue goals and the intensity of their pursuit. It manifests as information search, consideration of goal feasibility, goal intention, and goal commitment (Gollwitzer, 2012). Research indicates that temporal landmarks facilitate the generation and enhancement of goal motivation, stimulating relevant behaviors.

Temporal landmarks can strengthen individuals' search for goal-related information and increase their attention to goals. According to statistics from the Centers for Disease Control and Prevention, approximately two-thirds of American adults are overweight or obese (Centers for Disease Control and Prevention, 2013). Maintaining a healthy diet is one of the most effective ways to achieve optimal weight (Shai et al., 2008), making dieting an important goal for most Americans. Dai et al. (2014) analyzed internet searches for diet-related information among Americans and found that search volume increased to varying degrees with the start of a new week/month, New Year, and holidays. Similar patterns were replicated in other populations, with researchers finding that in Norway, online information search behavior—specifically, the frequency of Wikipedia searches for health (eight diseases), music, and sports-related terms—increased on Mondays (Gabarron, Lau, & Wynn, 2015). One possible explanation for these phenomena is that temporal landmarks increase individuals' perceived psychological distance between the past and present, isolating their current selves from their imperfect past selves and thereby promoting attention to and pursuit of goals. Furthermore, Ayers et al. (2014) more directly discovered, across seven languages, that individuals' searches for “smoking cessation” exhibit a weekly rhythm, with people paying more attention to quitting smoking on Mondays and experiencing the strongest motivation to pursue this goal. This suggests that temporal landmarks have cross-cultural consistency in promoting goal motivation, warranting further testing across more cultural contexts.

Temporal landmarks also significantly enhance individuals' intention to pursue goals. In a laboratory experiment, researchers asked participants to write down a goal they would initiate in April and specific plans for it, then choose a day between March 18 and 24 to receive a reminder email containing the goal de-

scription, implementation plan, and customizable motivational messages. The only difference between the two experimental materials was the description of March 20: the temporal landmark group described it as a landmark (Thursday; the beginning of Spring 2014), while the ordinary group described it as a regular day (Thursday; the third Thursday of March 2014). Results showed that compared to the ordinary group, more participants in the temporal landmark condition chose to receive the reminder email on March 20 (the beginning of spring) (Dai et al., 2015). In a subsequent study with college students, participants were more inclined to choose “the first day of summer vacation” over an ordinary school day to receive goal reminder emails. This demonstrates that individuals prefer to initiate their goals when temporal landmarks occur, as these landmarks enhance motivation and intention. Similar conclusions have been supported in Chinese contexts. Ye and Zhao (2015) found that emphasizing the start of the next semester enhanced college students’ exercise intentions. Notably, this study also revealed that temporal landmarks’ motivating effects were only effective among individuals with strong time-monitoring abilities, suggesting that boundary conditions may exist. Whether this effect is moderated by individual characteristics and other types of variables represents a specific direction for future research. The temporal landmarks used in these studies either divided adjacent natural seasons or separated two life periods (semester vs. summer vacation), making it easier for individuals to perceive a “fresh start” and thereby substantially enhancing their goal-pursuit intentions. Do other types of temporal landmarks have similar promoting effects? Dai et al. (2015) found that people’ s willingness to restart pursuing previously unfulfilled goals also significantly increased after their first house move. Thus, besides socially shared temporal landmarks, significant personal experiences can also enhance individuals’ intention to pursue goals and strengthen goal motivation.

Temporal landmarks also demonstrate motivating effects on goal commitment. Researchers examined commitment contracts from StickK.com to explore whether individuals’ behavior of signing such contracts varied with temporal landmarks (Dai et al., 2014). These commitment contracts are binding agreements that users voluntarily sign, with financial penalties for failing to achieve predetermined goals. Therefore, signing such contracts reflects strong intention and motivation to pursue goals. Results showed that people were more willing to create goal commitment contracts on Mondays, New Year’ s Day, holidays, and birthdays, with goals encompassing health, career development, education, and financial investment, demonstrating generalizability. This indicates that temporal landmarks increase the likelihood of making goal commitments, and the generation and enhancement of goal motivation are indeed positively influenced by certain temporal landmarks.

2.2 Motivating Effects on Goal Behavior

Achieving goals requires not only intention and motivation but also actual behaviors consistent with goal direction, such as initiating goals and implementing

specific plans. These behaviors represent the most direct manifestation of goal pursuit. Temporal landmarks also influence and shape individuals' explicit goal-related behaviors. Research has found that individuals' motivation to engage in goal-related behaviors strengthens when experiencing temporal landmarks, meaning the frequency of goal behaviors increases when temporal landmarks occur (Dai & Li, 2019; Lee & Dai, 2017).

Empirical studies have provided evidence for temporal landmarks' motivating effects on goal behavior. Dai et al. (2014) analyzed attendance data from a university-affiliated fitness center and found that attendance rates increased to varying degrees on Mondays, the first day of each month, New Year's Day, the beginning of semesters, and members' birthdays. This suggests that individuals' goal-related behaviors increase with the occurrence of temporal landmarks. However, this study primarily relied on archival data, which may be confounded by many other factors, necessitating more direct and robust empirical support. Subsequently, Hennecke and Converse (2017) conducted an experimental study on dieting goals and found that compared to other times in the calendar, Mondays and the first day of a new month were more attractive for initiating goals. People indeed preferred to start taking action toward their goals on these temporal landmarks, and their expectations for goal pursuit also increased. This further demonstrates that temporal landmarks can enhance individuals' motivation to pursue goals.

Beyond health domains, savings has become another focal point for researchers. Beshears, Dai, Milkman, and Benartzi (2017) conducted a nine-month field experiment in retirement savings with 8,682 employees from four U.S. universities randomly assigned to three conditions: a no-delay condition inviting participants to immediately increase savings; a standard-delay condition allowing participants to choose to increase savings immediately or after a delay (e.g., two months); and a fresh-start-delay condition allowing participants to choose to increase savings immediately or after a temporal landmark (e.g., their next birthday). The latter two conditions both employed the pre-commitment nudge principle, with the only difference being that the fresh-start-delay condition combined pre-commitment with future temporal landmarks in its description, potentially attracting more people to increase savings. Results supported the hypothesis: compared to pre-commitment alone, the fresh-start-delay condition yielded higher average savings rates. These studies demonstrate that temporal landmarks have motivating effects at the behavioral implementation level. However, they lack systematic theoretical construction and do not address the psychological mechanisms underlying these effects, which the following section will specifically discuss.

3 Psychological Mechanisms of Temporal Landmarks' Motivating Effects

The motivating effects of temporal landmarks on goal pursuit represent an external-to-internal influence process. The existence of temporal landmarks

creates a sense of discontinuity and non-substitutability in time perception, creating temporal mental accounts (Dai et al., 2014; Rajagopal & Rha, 2009) that affect self-appraisal across different accounts. This process not only changes individuals' current self-identity (Wilson & Ross, 2001) but also guides their planning and behavior, motivating them to take action toward goal pursuit and attainment (Pronin, Olivola, & Kennedy, 2008). This paper integrates relevant theories from a self-appraisal perspective to explore the psychological mechanisms underlying temporal landmarks' motivating effects.

3.1 Temporal Mental Accounting Theory

When engaging in self-appraisal, individuals rarely limit themselves to the present moment but extend their self-concept to the past and future. The past self, present self, and future self are interconnected yet separate, collectively forming an individual's complete identity (Haddock, 2004). Individuals frequently compare temporal selves (Wilson & Ross, 2001), such as whether they are more mature now than in the past or whether they hope to have a better physique in the future. Notably, the perception of connection and separation between these temporal selves is malleable and can change over time (Libby, Eibach, & Gilovich, 2005), influenced by many factors including time, visual perspective, similarity focus, and emotional intensity (Hanko, Crusius, & Mussweiler, 2010; Libby et al., 2005; Pronin et al., 2008). Among these, temporal landmarks are a key determinant (Libby & Eibach, 2011; Peetz & Wilson, 2013). When individuals perceive stronger connections between different temporal selves, they judge them as more similar, leading to greater assimilation of past or future selves into the present self (Hanko et al., 2010); conversely, greater contrast occurs when connections are weaker.

Temporal mental accounting theory explores how time is perceived and tracked from a mental accounting perspective. Resources within different temporal mental accounts (here, self-appraisal) are non-substitutable (Rajagopal & Rha, 2009). The division between temporal mental accounts is often based on certain criteria, such as dividing them cross-sectionally into work time mental accounts and family time mental accounts according to activity content. Similarly, because temporal landmarks are salient and distinctive to individuals, they can divide time longitudinally into independent temporal mental accounts. For temporal selves belonging to different accounts, individuals increase their perceived psychological distance, thereby weakening the sense of connection and strengthening the sense of separation between different temporal selves. Consequently, individuals appraise selves within different temporal mental accounts differently, perceiving differences between past, present, and future selves, which subsequently enhances goal-pursuit motivation through further psychological processes. This occurs in two directions: first, temporal landmarks can divide past and present temporal mental accounts, increasing separation and contrast between present and past selves; second, they can divide present and future temporal mental accounts, increasing separation and contrast between present

and future selves.

3.2 Temporal Self-Appraisal Theory

Temporal self-appraisal theory focuses on individuals' evaluative tendencies toward past and present selves (Wilson & Ross, 2001). The theory posits that because past selves' mistakes do not easily damage the current self-image and pose less threat, while criticizing past selves' shortcomings also signals expectations for self-improvement, individuals tend to attribute negative traits and failures to the past—engaging in downward temporal comparison—to enhance self-esteem and maintain a positive present self-image (Dai et al., 2015; 孙炯雯, 郑全全, 2004). However, this tendency only benefits the present self when past and present selves are separated (Wilson & Ross, 2001). Therefore, when temporal landmarks prompt individuals to attribute previous failures or shortcomings to the past self, they may enhance goal-pursuit motivation through several psychological processes: self-efficacy, maintaining a consistent self-image, and loss aversion (Dai et al., 2015), thereby prompting more goal-related behaviors.

First, separation from past failures can reduce their negative impact on the present self and generate a sense of superiority over the present self (Dai et al., 2014), thereby enhancing self-efficacy and increasing individuals' confidence in executing plans and achieving goals. Moreover, when people have high self-efficacy, they set more challenging goals and maintain more persistent effort when facing obstacles (Schmidt & DeShon, 2010). Thus, enhanced self-efficacy can motivate people to perform better than in the past, actively pursuing goals with greater enthusiasm and confidence. Second, research shows that people tend to maintain a consistent self-image (Kivetz & Tyler, 2007). When individuals perceive their present self as superior to their past self (e.g., more self-disciplined), they tend to behave consistently with this appraisal (Cialdini, 2007). Therefore, when less affected by past failures, individuals are motivated to act in ways consistent with their positive new self-concept and are more motivated to take action toward self-improvement goals (Dai et al., 2015). Third, when temporal landmarks open a new temporal mental account, they essentially set an initial reference point. At this point, deviations from goals correspond to the steepest part of the loss utility curve in prospect theory (Heath, Larrick, & Wu, 1999), making initial deviations from the new reference point generate greater feelings of loss (Colby & Chapman, 2013). Consequently, people may enhance self-control to avoid losses, increasing the likelihood of behaviors that facilitate goal attainment.

Notably, the above theoretical explanations only focus on cases where past self-appraisal is worse than present self-appraisal, which has certain limitations. Individuals do not always perceive their past selves as full of frustration. When people have achieved high accomplishments before a temporal landmark and perceive their past self as superior, their positive feelings toward their present self decrease (Dai & Li, 2018). This would inevitably lead to reduced confidence and negatively affect goal-pursuit motivation. This likely represents a bound-

ary condition for temporal landmarks' motivating effects that requires further empirical validation.

3.3 Mental Contrasting Theory

People compare not only their present selves with past selves but also with future selves. Mental contrasting theory proposes that psychological contrast between individuals' current shortcomings and desired ideal states is necessary for motivating behavior and achieving successful outcomes (Oettingen et al., 2009). For example, when smokers want to quit, they can sequentially write about their desired future self and their current smoking self. Compared to merely fantasizing about future success, such mental contrasting is more effective in prompting behavior consistent with desired goals (Oettingen, Mayer, & Thorpe, 2010). Similarly, in Koo and Fishbach' s (2008) experiment, participants established a goal to collect charitable donations. Those who focused on the discrepancy between current collections and the goal ultimately raised more funds than those who only focused on amounts already collected. These findings demonstrate that when individuals mentally contrast their currently inadequate self with their desired future self, the hindrance of the current state to the ideal state increases motivation for self-improvement, helping to inspire people to take corresponding actions to achieve their desired future state. This feeling can even emerge in imagined situations (Bartels & Rips, 2010). Therefore, when temporal landmarks help individuals establish mental categories of different temporal selves, enhancing the difference and contrast between the currently inadequate self and the desired future self, the "discrepancy-reduction" psychological process is activated, which motivates individuals to bridge the gap (Koo & Fishbach, 2008), increases goal-pursuit motivation, and prompts behaviors to achieve personal goals and realize the desired future self-state.

Additionally, in real life, there exists a psychology where individuals feel satisfied with their current self-state but have negative expectations for their future self. In Peetz and Wilson' s (2014) study, they found that temporal landmarks naturally triggered psychological separation between the present self and a negative future self, reducing the negative impact of the undesirable future on the present self. Through experimental manipulation, they further discovered that when participants' self-improvement mindset was activated, they were more inclined to use temporal landmarks to protect their present self from potential negative future selves such as unemployment, weight gain, or debt. Individuals have a preference for maintaining consistent cognitive tendencies, and the sense of separation from a negative future self motivates individuals to maintain their current self-state and avoid becoming a negative future self by exerting effort and taking action. Therefore, in this situation, temporal landmarks also enhance goal-pursuit motivation, inspiring individuals to implement their plans and goals to prevent potential negative outcomes.

3.4 Summary

In summary, temporal mental accounting theory posits that time is discontinuous and non-substitutable for individuals. Consequently, temporal landmarks can influence the sense of connection and separation between temporal selves by dividing different temporal mental accounts. Temporal self-appraisal theory focuses primarily on the relationship between past and present selves, while mental contrasting theory emphasizes the comparison between present and future selves. Therefore, this paper integrates these theories from a self-appraisal perspective to clarify the psychological mechanisms of temporal landmarks' motivating effects (see Figure 1 [Figure 1: see original paper]). Temporal landmarks are salient and specific in individuals' schedules and often hold unique meaning. They make individuals perceive time as discontinuous, dividing it into different temporal mental accounts along the longitudinal time dimension, which increases the sense of separation and distance between selves at different time points. When individuals perceive cognitive differences between their imperfect past self and present self, they may enhance goal-pursuit motivation through psychological processes of self-efficacy, maintaining a consistent self-image, and loss aversion, prompting them to implement goal-consistent behaviors. When individuals perceive separation between their present self and future self, the need for discrepancy reduction and maintaining a consistent self-image also motivates them to increase motivation levels and engage in behaviors that facilitate personal goal attainment.

Figure 1 Psychological Mechanisms of Temporal Landmarks' Motivating Effects

Note: The horizontal axis represents the timeline, indicating temporal landmarks.

4 Future Research Directions

As a novel research direction, studies on temporal landmarks' motivating effects are still in their infancy. Although researchers have explored these effects from different perspectives and conducted empirical tests, many questions remain to be further explored and deepened.

First, the role positioning of temporal landmarks in motivating effects and the duration of these effects warrant investigation. When temporal landmarks serve as the starting point of a goal-attainment cycle, they can enhance motivation and inspire positive behaviors toward goal achievement. However, when temporal landmarks function as deadlines for plans or goals, do people categorize them as present or future? How does this affect perceived psychological distance between temporal selves, and can it similarly enhance motivation and promote timely or early goal completion? Moreover, although temporal landmarks can significantly enhance goal-pursuit motivation, the durability of this motivational effect remains untested. Dai et al. (2017) conducted a field experiment on medication adherence with a U.S. insurance company, sending reminders at specific

temporal landmarks, but found no significant increase in medication adherence during the three-month observation period. This may be because improving medication adherence requires persistence, while temporal landmarks' motivating effects may be relatively short-lived. Therefore, the duration of temporal landmarks' motivating effects represents another important topic for future research.

Second, the generalizability of temporal landmarks' motivating effects requires investigation. On one hand, current research has primarily focused on health-related outcome variables (e.g., smoking cessation, exercise). Future studies should validate these effects across more diverse personal improvement goals, such as educational and financial objectives. On the other hand, temporal landmarks can be divided into two major types with six subcategories. These landmarks may resonate with people' s cultural, professional, or religious identities, or hold personal significance—for instance, people typically value first-time experiences more and are more likely to perceive them as “fresh starts” (LeBoeuf et al., 2014). Although existing research has examined the motivating effects of various temporal landmarks including holidays, birthdays, and the first days of weeks/months/years, no horizontal comparisons have been made. Do all types of temporal landmarks have motivating effects on goals, and do they differ in intensity?

Third, further exploration of other potential psychological mechanisms is needed. Temporal landmarks' motivating effects may operate through multiple psychological processes. Liu (2008) suggests that interruptions during decision-making change individuals' information processing. As a form of interruption, temporal landmarks disrupt individuals' focus on daily details and emotions (Smith, 2014), shifting attention toward higher-level, goal-related information (Alter & Hershfield, 2014). This prompts people to adopt a broader, global perspective and a more objective, abstract, and conceptual thinking tendency in decision-making (Trope & Liberman, 2010), making them more goal-achievement oriented and more likely to base choices on aspirations for goal attainment rather than required time and effort, thus receiving more encouragement (Hennecke & Converse, 2017). Therefore, temporal landmarks may enhance goal-pursuit motivation by changing information processing and cognitive thinking patterns, prompting effective goal-consistent behaviors. Additionally, temporal landmarks may prompt people to reevaluate their lives and focus more on long-term goals than short-term benefits (Alter & Hershfield, 2014), making them more likely to engage in positive, goal-consistent behaviors.

Fourth, applied research should be conducted on using temporal landmarks to nudge behavioral decision-making. Nudging is a novel and effective guided management approach that changes people' s choices or motivations and behaviors through small, gentle means without coercion in any aspect of the choice architecture (理查德·塞勒, 卡斯·桑斯坦, 2008/2018)—a form of “libertarian paternalism.” Nudging changes individual behavior by applying specific methods such as default options, pre-commitment, and mental accounting based on psy-

chological principles of behavioral choice (何贵兵, 李纾, 梁竹苑, 2018) to achieve self-improvement and promote social development. Therefore, temporal landmarks can also be employed as a nudging tool. For individuals, launching goals or setting goal reminders at meaningful temporal landmarks that symbolize fresh starts can help reduce the likelihood of abandoning goals or giving up halfway, facilitating personal goal attainment. In organizational practice, managers can apply temporal landmarks' motivating effects to optimize corporate strategic planning and employee goal management, such as setting three- or five-year plans, establishing long-, medium-, and short-term goals based on temporal landmarks, and sending goal reminders to employees at appropriate times to enhance actual plan implementation and goal achievement efficiency. In social policy, policymakers can use temporal landmarks to promote public acceptance and compliance with new systems and regulations, launching nudging initiatives such as "New Year Environmental Action" to encourage good civic behavior and promote social development.

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