

How experiencing and anticipating temporal landmarks influence motivation

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Temporal landmarks, or moments that stand out in time, structure people's perceptions and use of time. We highlight recent research examining how both experiencing and anticipating temporal landmarks impact motivation and goal pursuit. Experiencing a temporal landmark may produce a 'fresh start effect', making people feel more motivated to pursue their goals right after the landmark. Anticipating a future landmark may also increase people's current motivation if they are reminded of an ideal future state. We review one prominent explanation underlying these findings: temporal landmarks can create a psychological separation between past, current, and future selves. We also propose other possible explanations and discuss circumstances under which experiencing and anticipating temporal landmarks may cease to be motivating, or even harm motivation.

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Current Opinion in Psychology 2019, **26**:44–48

This review comes from a themed issue on **Time**

Edited by **Cassie Mogilner** and **Sanford E. DeVoe**

For a complete overview see the [Issue](#) and the [Editorial](#)

Available online 30th April 2018

<https://doi.org/10.1016/j.copsyc.2018.04.012>

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Introduction

People's lives are demarcated by temporal landmarks, events that 'stand in marked contrast to the seemingly unending stream of trivial and ordinary occurrences' [1]. Temporal landmarks organize people's time perceptions, memories, and activities by creating mental accounting periods [1–3]. In this article, we review recent research about how *experiencing* and *anticipating* temporal landmarks influence motivation and goal pursuit.

Temporal landmarks

Three common types of temporal landmarks include transition points of a social timetable (e.g. the start of a new week, month, year, or semester), momentous life

events (e.g. a birthday, a wedding), or significant public events (e.g. a national election). Similar to geographical landmarks that aid physical orientation, temporal landmarks organize memories and experiences in time [1,2]. By creating boundaries between temporal periods, they influence the way people recall the past [1,4–6], experience the present [7], and plan for the future [8*].

Psychological separation induced by temporal landmarks

In opening new mental accounting periods, temporal landmarks generate a sense of psychological disconnect between people's past, current, and future selves [8*,9,10*]. Researchers have noted that temporal landmarks — which may include anything from a holiday to a new job — lead people to feel more distant and different from their past or future selves [8*,9,11–13]. This sense of contrast between temporal selves is particularly noticeable when landmark events are highlighted, either by an external source [8*] or by individuals themselves [10*].

Experiencing temporal landmarks

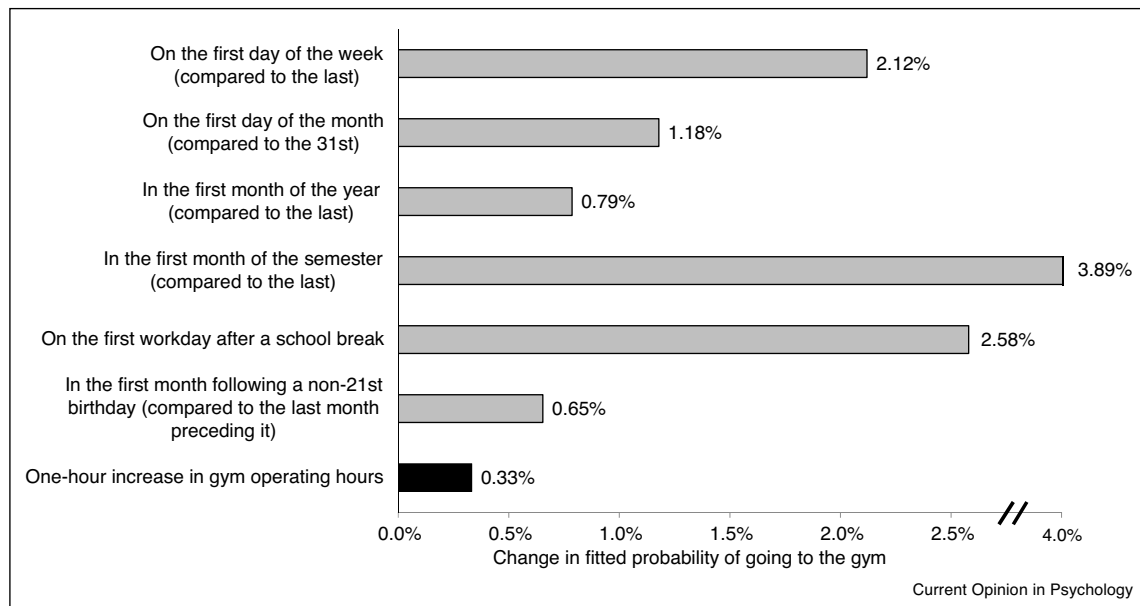
Experiencing a temporal landmark may shape perceptions of the self and subsequently affect behavior. In this section, we review research on how motivation changes after people experience a temporal landmark.

The 'fresh start effect'

How does the feeling of psychological disconnect between temporal selves generated by temporal landmarks affect motivation? When a temporal landmark occurs and separates the past and present selves, it creates a clean slate and allows people to relegate their missteps to the past [14*,15*]. This process may lead people to evaluate their current self in a more flattering light relative to the flawed past self, and consequently feel more confident [16]. The elevated confidence provides the impetus for people to strive toward their goals with renewed vigor in the present [17]. Additionally, people may more actively avoid deviating from their goals after experiencing a temporal landmark to avoid ruining the clean slate created by the landmark [18,19]. These reasons suggest that the disassociation between a person's past and present selves can increase motivation after a temporal landmark arises — a phenomenon referred to as the 'fresh start effect' [14*,15*].

Indeed, field studies across different samples show that people are more likely to engage in goal-related activities immediately after temporal landmarks, compared to ordinary days [14*]. For instance, researchers have

Figure 1



Gym attendance increases following a temporal landmark. This figure shows estimated changes in the fitted probability of a student going to the gym on a given day as a function of the date and its proximity to a variety of temporal landmarks [15^{*}]. These effects are compared to the effect of a one-hour increase in the gym's operating hours on the likelihood of going to the gym.

documented notable increases in gym attendance, online searches for diet-related information, and the creation of goal commitment contracts at the beginnings of weeks, months, years, and semesters, after holidays, school breaks, and birthdays [14^{*}] (see Figure 1 for an example). Extending this evidence from observational data, follow-up research has presented causal evidence from laboratory experiments suggesting that temporal landmarks lead people to engage in goal-related activities by increasing the psychological distance between the imperfect past self and the current self [15^{*}].

Alternative explanations for increased motivation after temporal landmarks

In addition to the sharper psychological disconnect between past and current selves, there may be other explanations for the boost in motivation after the experience of a temporal landmark. First, temporal landmarks may induce a 'big picture' mindset by interrupting day-to-day minutiae. A focus on the 'big picture' directs attention to high-level, goal-relevant information, increasing people's motivation to achieve their aspirations [20–22]. Second, some temporal landmarks are associated with breaks and relaxation (e.g. Mondays after the weekend, post-holidays associated with holiday breaks) that provide chances to renew energy and motivation [23–25]. Finally, certain temporal landmarks (e.g. a move to a new city, a transfer to a new college) are associated with changes in environmental stimuli, which can break old habits and establish new, positive ones [26].

Adverse effects of experiencing temporal landmarks on motivation

Despite its motivating effects, experiencing a temporal landmark can also produce adverse effects on motivation. For instance, temporal landmarks may induce a mental contrast with previous successes and discourage individuals with consistent high achievement in the past [27^{*}]. Additionally, temporal landmarks associated with changes in the surrounding environments may remove recurring cues that trigger habit performance, thus disrupting positive habits [26]. In particular, if an individual has proven responsive to an intervention and has already begun to build a habit, a temporal landmark that changes her circumstances (e.g. a school break during which a college student returns home) may reverse the positive effects of the learned positive behavior [28,29].

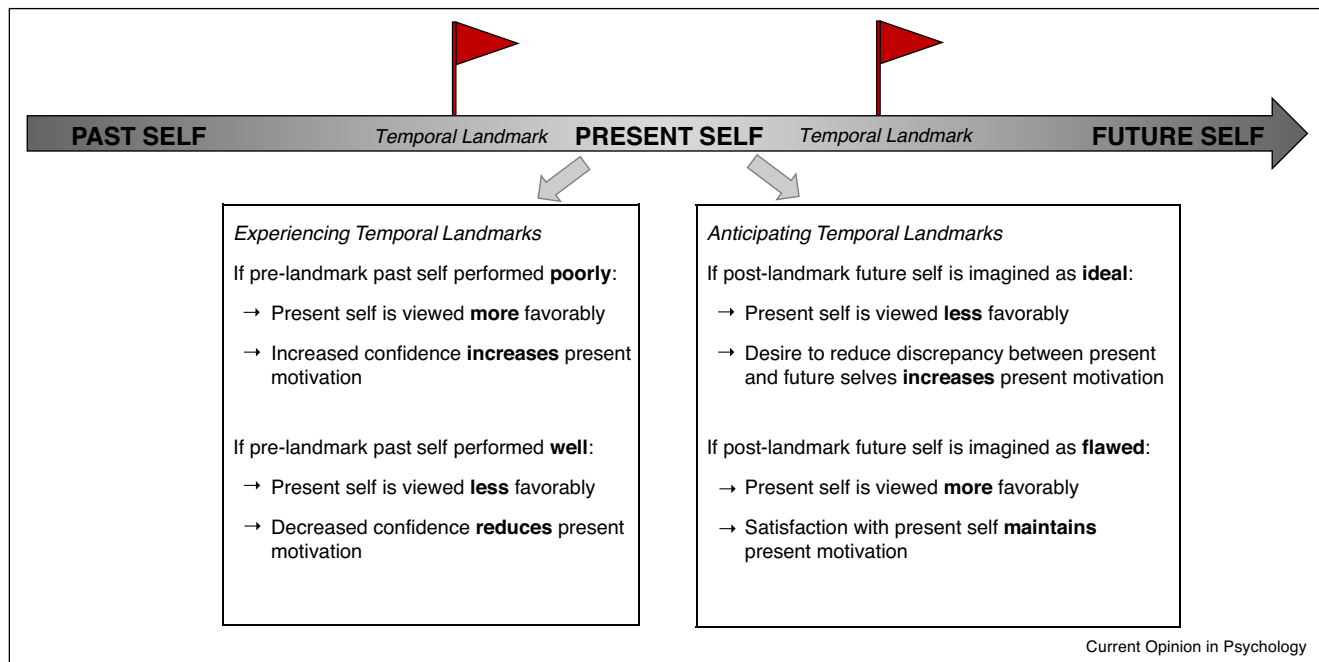
Anticipating temporal landmarks

In addition to effects produced through the *experience* of temporal landmarks, the *anticipation* of temporal landmarks also impacts decision-making. In this section, we review research about how future temporal landmarks affect motivation.

Future temporal landmarks and planning for goal initiation

Research suggests that people view future temporal landmarks as favorable times to initiate goal pursuit. In a recent study by Dai *et al.* [15^{*}], people chose to receive a goal reminder (a goal initiation activity) on March 20 more

Figure 2



Temporal landmarks induce a psychological disconnect between temporal selves and affect present motivation. This figure summarizes recent research on how temporal landmarks affect current motivation by altering psychological distance between temporal selves [14[•],15[•],27[•],8[•]].

frequently when the date was highlighted as ‘The First Day of Spring’ — a temporal landmark (25.61%) — than when it was labeled as just an ordinary day (7.23%). Similarly, when people are deliberately planning on a time to begin pursuing their goals, they prefer days associated with a future landmark event (e.g. a day highlighted as the first day of a week) over ordinary days in the future (e.g. a day described solely by its calendar date and not highlighted as the first day of a week) [30[•],31[•]]. This preference may be due to people’s tendency to underestimate the difficulty of goal pursuit when evaluating goal initiation opportunities that are available on days associated with a future temporal landmark, as opposed to on ordinary days [31[•]].

Future temporal landmarks and present motivation

The anticipation of future temporal landmarks can also influence people’s present motivation in various ways. For instance, a salient landmark in the future leads people to mentally contrast their present self with their post-landmark future self, much as a landmark that has just passed divides the present and past selves [8[•]]. Purposefully drawing people’s attention to an intervening landmark between now and a point in time associated with their ideal future state highlights the discrepancy between their flawed present and ideal future selves. Since people are motivated to reduce the perceived discrepancy between their present self and the ideal future self that they strive for, highlighting an

intervening landmark event can lead people to act in more goal-consistent ways in the present than they would if the landmark was not made salient [8[•]]. As an example, think of a student who is asked in May to imagine herself with a desired GPA in six months (i.e. in November). When she is reminded of the start of the fall semester — a temporal landmark that falls in between the present and her ideal future self — she will work harder now than if she had not been reminded of the intervening temporal landmark. This effect disappears when people are reminded of a possible negative future self that they hope to avoid [8[•]].

On the other hand, future landmarks also reduce present motivation and produce undesirable behavior in some circumstances. When a temporal landmark lies between the present and a task deadline, people may perceive the deadline as falling into a different mental category than the present and adopt a weaker implemental mindset, which may in turn decrease their willingness to start working on the task now [32[•]]. Moreover, researchers have found that people tend to audit their lives for meaningfulness in the time period leading up to a landmark. For instance, the approach of a new decade in chronological age (e.g. a 30th birthday) is associated with more frequent major life changes, including not only positive decisions such as running a marathon but also negative ones such as engaging in an extramarital affair or even exhibiting suicidal tendencies [33[•]].

Conclusion

Though time flows continuously, people often perceive, organize, and plan time in a categorical manner. This article provides a brief review of recent research about how the categorical representation of time caused by temporal landmarks influences motivation. Research suggests that both past and future temporal landmarks may increase motivation in some circumstances (e.g. when people previously experienced failure, when people are reminded of an ideal future state), but produce adverse effects in others (e.g. when people were previously making progress on forming a positive habit, when a landmark causes a deadline to appear further away). Future research is needed to better understand when and to whom temporal landmarks can serve as a motivational tool.

This article highlights the psychological connection between temporal selves as one explanation underlying several reviewed papers [14^{*},15^{*},8^{*}]. As illustrated in Figure 2, psychological distance between temporal selves can explain why motivation increases right after a landmark if one's past self was imperfect [14^{*},15^{*}] as well as why motivation increases prior to a temporal landmark if one's ideal future self is highlighted [8^{*}]. A comprehensive theory that (a) links this psychological-distance-based mechanism with other behavior changes induced by temporal landmarks and (b) incorporates other potential mechanisms reviewed in this article would enable us to better predict individuals' responses to landmark events.

Conflict of interest statement

Nothing declared.

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- of special interest
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Performance resets — moments when individuals' performance on a metric is decoupled from past performance — represent a type of fresh start that separate the past and present and often occur together with a temporal landmark (e.g. at the beginning of a year, quarter, month; after a school transition). Resets boost motivation following weak past performance by increasing confidence, but may harm motivation following strong past performance by decreasing confidence.

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A field experiment tested the efficacy of a fresh-start framing nudge — offering people an opportunity to start saving after a future temporal landmark — on retirement savings. The results provide suggestive evidence that allowing people to start a desirable behavior change after a temporal landmark may effectively increase participation and commitment than allowing people to start on a random future day.

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When deciding on a time to initiate goal pursuit, people prefer future days that fall immediately after a temporal landmark. This is partly because people neglect situational constraints and underestimate the difficulty of goal pursuit when they consider initiating goal pursuit after (versus before) a temporal landmark.

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People categorize temporal events as being either 'like the present' or 'unlike the present'. When a task deadline is categorized as being 'unlike the present' (e.g. when an intervening temporal landmark puts now and the deadline into two separate mental categories), it reduces individuals' implemental mindset and thus decreases current motivation.

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People tend to search for meaning in their lives when they approach a new decade in chronological age (at ages 29, 39, or 49, for example). These periods are associated with an increased number of major life decisions.