

Summer 2017

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### Recommended Citation

Jonathan Lee and Hengchen Dai, *The Motivating Effects of Temporal Landmarks: Evidence from the Field and Lab*, 82 MO. L. REV. (2017)

Available at: <https://scholarship.law.missouri.edu/mlr/vol82/iss3/8>

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# The Motivating Effects of Temporal Landmarks: Evidence from the Field and Lab

Jonathan Lee\*

Hengchen Dai\*\*

## I. INTRODUCTION

People often set and strive for goals in their pursuit of a better self. For example, individuals may commit to health goals, such as eating less junk food or quitting smoking; others may set relationship goals, such as being more compassionate and attentive; and criminals may declare their intention to abstain from illegal behaviors. Despite their best intentions, however, individuals often find themselves committing undesirable actions in violation of their goals. Dieters may fail to resist temptation and eat a donut; spouses may fail to control their emotions and lash out at loved ones after a stressful work day; and formerly incarcerated individuals may fall prey to their old, unlawful habits. Failed attempts at following through on their good intentions may lead individuals to believe they are not capable of making positive changes. This resignation may foster a “what the hell” rationalization – the tendency to engage further in undesirable behaviors following a first step in the unwanted direction – and lock individuals with past failures in an undesired, negative cycle.<sup>1</sup>

What could free individuals from this cycle? Are there naturally arising points in time when people tend to feel untarnished by their past imperfections and become more determined than usual to tackle their goals? This article reviews recent work in the field of judgment and decision-making that examines (a) what types of external events can generate feelings of a fresh start, (b) how these events affect individuals’ goal motivation, and (c) how insights about

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The second author thanks Katherine L. Milkman, Jason Riis, John Beshears, Shlomo Benartzi, David Mao, Kevin G. Volpp, Michael J. Relish, and Victor F. Lwnicki who coauthored the papers that are reviewed in this article.

1. Winona Cochran & Abraham Tesser, *The “What the Hell” Effect: Some Effects of Goal Proximity and Goal Framing on Performance*, in STRIVING AND FEELING: INTERACTIONS AMONG GOALS, AFFECT, AND SELF-REGULATION 99, 99–120 (Leonard L. Martin & Abraham Tesser eds. 1996); Dilip Soman & Amar Cheema, *When Goals Are Counterproductive: The Effects of Violation of a Behavioral Goal on Subsequent Performance*, 31 J. CONSUMER RES. 52, 55–56 (2004).

these external events can be capitalized to design “nudge” techniques that steer people towards future-oriented decisions.<sup>2</sup> Specifically, this article will first introduce the concept of “temporal landmarks” and discuss why temporal landmarks may feel like fresh starts and inspire the pursuit of self-improvement goals. Next, it will review studies that examine the relationship between temporal landmarks and goal motivation, including one that presents a field application of leveraging temporal landmarks to promote future-oriented decisions. It will conclude with a discussion about the potential implications of this stream of research for policymakers interested in designing nudge interventions.

## II. THE PSYCHOLOGY OF THE FRESH START EFFECT

The line of work reviewed in this article examines the effects of temporal landmarks on individuals’ engagement in goal pursuit.<sup>3</sup> Temporal landmarks are distinct events that “stand in marked contrast to the seemingly unending stream of trivial and ordinary occurrences that happen to us everyday.”<sup>4</sup> Temporal landmarks include personally meaningful life events such as birthdays, job changes, and being released from prison. In addition to events with personal meaning, temporal landmarks also include transition points on calendars, such as the beginning of the week, month, season, and year, as well as holidays. By demarcating the boundaries of adjacent time periods, temporal landmarks help people organize memories, experiences, and activities.

Dai and her colleagues propose that temporal landmarks can increase people’s motivation to tackle their goals.<sup>5</sup> By delineating the passage of time and opening new temporal periods, temporal landmarks make people feel psychologically separated from their past selves. For example, a newlywed may feel different from her pre-wedding self, and a person who just turned thirty may

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2. RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 6 (2008). “Nudge” is defined as “any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives.” *Id.*

3. See Hengchen Dai, Katherine L. Milkman & Jason Riis, *The Fresh Start Effect: Temporal Landmarks Motivate Aspirational Behavior*, 60 *MGMT. SCI.* 2563 (2014) [hereinafter Dai, Milkman & Riis, *Fresh Start*]; Hengchen Dai, Katherine L. Milkman & Jason Riis, *Put Your Imperfections Behind You: Temporal Landmarks Spur Goal Initiation When They Signal New Beginnings*, 26 *PSYCHOL. SCI.* 1927 (2015) [hereinafter Dai, Milkman & Riis, *Imperfections*]; John Beshears, Hengchen Dai, Katherine L. Milkman & Shlomo Benartzi, *Framing the Future: The Risks of Pre-Commitment Nudges and Potential of Fresh Start Messaging* 1–40 (Jan. 20, 2017) (working paper), (available at <https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbmVubGluaGVuZ2NoZW5kYW18Z3g6NmZkZmRiZDZmMWRjMDM2NW>).

4. Michael S. Shum, *The Role of Temporal Landmarks in Autobiographical Memory Processes*, 124 *PSYCHOL. BULL.* 423, 423 (1998).

5. See generally Dai, Milkman & Riis, *Fresh Start*, *supra* note 3; Dai, Milkman & Riis, *Imperfections*, *supra* note 3.

feel that he is not the same person he was at twenty-nine.<sup>6</sup> This process allows people to relegate their failures and imperfections to the previous temporal period and their past selves, reducing bearing on their present selves. As a result, following temporal landmarks individuals may feel more confident in their ability to reach their goals and thus be more likely to take action.<sup>7</sup> Also, people may feel the urge to behave according to their new, more positive self-image<sup>8</sup> and act on their self-improvement goals. Furthermore, people may find it aversive to deviate from their goals following a temporal landmark, as negative acts are now no longer “one of many” but will instead stick out and ruin the “clean slate” that follows the temporal landmark.<sup>9</sup> In addition, temporal landmarks (such as milestone birthdays, deaths of significant others) may prompt people to take stock of their lives<sup>10</sup> and focus on their long-term goals instead of their short-term interests.<sup>11</sup> Connecting all of these arguments, Dai and her colleagues hypothesize that temporal landmarks are associated with increased goal motivation, an effect they dub the “fresh start effect.”<sup>12</sup>

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6. See Daniel M. Bartels & Lance J. Rips, *Psychological Connectedness and Intertemporal Choice*, 139 J. EXPERIMENTAL PSYCHOL. 49 (2010); see also Johanna Peetz & Anne E. Wilson, *The Post-Birthday World: Consequences of Temporal Landmarks for Temporal Self-Appraisal and Motivation*, 104 J. PERSONALITY & SOC. PSYCHOL. 249 (2013); Anne E. Wilson & Michael Ross, *The Identity Function of Autobiographical Memory: Time Is on Our Side*, 11 MEMORY 137 (2003).

7. See ALBERT BANDURA, SELF-EFFICACY: THE EXERCISE OF CONTROL 279–310 (1997).

8. See ROBERT B. CIALDINI, INFLUENCE: THE PSYCHOLOGY OF PERSUASION 77 (2007); LEON FESTINGER, A THEORY OF COGNITIVE DISSONANCE 32–47 (1957).

9. See Dai, Milkman & Riis, *Imperfections*, *supra* note 3. See also Chip Heath, Richard P. Larrick & George Wu, *Goals as Reference Points*, 38 COGNITIVE PSYCHOL. 79 (1999), and Soman & Cheema, *supra* note 1, for studies concluding that the failure to obtain goals results in negative emotion and poorer subsequent performance.

10. Adam L. Alter & Hal E. Hershfield, *People Search for Meaning When They Approach a New Decade in Chronological Age*, 111 PNAS 17066 (2014).

11. Wendy Liu & Jennifer Aaker, *Do You Look to the Future or Focus on Today? The Impact of Life Experience on Intertemporal Decisions*, 102 ORG. BEHAV. & HUM. DECISION PROCESSES 212, 214 (2007).

12. See Dai, Milkman & Riis, *Fresh Start*, *supra* note 3; Dai, Milkman & Riis, *Imperfections*, *supra* note 3. The first three psychological processes that we describe in this paragraph (i.e., the increase in confidence, the desire to maintain a positive self-image, and the aversion to ruin a clean slate) are likely to be more suitable for positive temporal landmarks (e.g., getting married, the birth of a baby) than for negative temporal landmarks (e.g., getting a divorce, the death of a family member). The last psychological process (i.e., taking a big stock of life) may apply to both positive and negative temporal landmarks. We note that the temporal landmarks reviewed in our article are either neutral or positive.

### III. PAST RESEARCH ESTABLISHING THE FRESH START EFFECT

The first paper that we review examines how engagement in goal-related activities changes following temporal landmarks by analyzing archival data.<sup>13</sup> In Study 1, the researchers collected 3104 days' worth of data from "Google Insights for Search" on the daily number of Google searches for the term "diet" – a proxy for public interest in dieting, one of the most popular New Year's resolutions.<sup>14</sup> The researchers used regression analyses to predict daily searches for the term "diet" as a function of a variety of temporal landmarks, including the beginning of the week, month, and year, as well as U.S. federal holidays.<sup>15</sup> Consistent with their hypothesis, the researchers found that searches for the term "diet" increased at the start of a new week (by 14.4%), a new month (3.7%), a new year (82.1%), as well as following federal holidays (10.2%), relative to baseline.<sup>16</sup>

In Study 2, the researchers examined actual engagement behaviors by analyzing gym attendance data for 11,912 members of a university-affiliated fitness center during a 442-day span.<sup>17</sup> The researchers found that, as compared to the baseline of gym attendance frequency, the probability of individuals visiting the gym on a given day increased at the beginning of a new week (by 33.4%), a new month (14.4%), a new year (11.6%), and a new semester (47.1%), as well as following the university's breaks (24.3%) and the individual members' birthdays (7.5%).<sup>18</sup>

Study 3 demonstrated the generalizability of the fresh start effect. In light of the concern that findings in the first two studies reflected responses to overindulgence prior to temporal landmarks, the researchers examined a broad set of goals, which included health-irrelevant goals (such as goals in the domain of career, education, and finance).<sup>19</sup> Specifically, they examined 66,062 commitment contracts by 43,012 users of a goal-setting website, StickK.com.<sup>20</sup> A "commitment contract" on StickK.com is a binding agreement that users sign voluntarily that imposes a financial penalty if they fail to achieve their goals

13. Dai, Milkman & Riis, *Fresh Start*, *supra* note 3, at 2566.

14. *Id.*

15. *Id.* at 2567.

16. *Id.* at 2569. Baseline refers to the average daily search volume at the end of a week, at the end of a month, at the end of a year, and on days that are not the first day after federal holidays, respectively.

17. *Id.* at 2569–70.

18. *Id.* at 2572. This effect size is estimated based on an analysis of gym attendance records for the 2706 students whose birthdates were made available to researchers. *Id.* This paper found that gym attendance frequency was higher immediately after birthdays (with the exception of the twenty-first birthday) and then declined over the course of the birth year. *Id.*

19. *Id.* at 2573.

20. *Id.*

pre-specified in the contract.<sup>21</sup> Creating a commitment contract not only indicates a strong intention to pursue a goal, but it also can facilitate goal pursuit.<sup>22</sup> The researchers first tested the fresh start effect among all types of goals, combining health-relevant and health-irrelevant goals.<sup>23</sup> Compared to baseline, people's likelihood of creating a commitment contract increased at the beginning of a new week (by 62.9%), a new month (23.6%), and a new year (145.3%), as well as following federal holidays (55.1%) and their birthdays (2.6%).<sup>24</sup> These results remained basically the same when researchers exclusively focused on health-irrelevant goals.<sup>25</sup>

To summarize, across three field contexts, this paper demonstrates that individuals take active steps to pursue personal goals following a host of temporal landmarks, including both calendar and personal landmarks. These landmarks transition individuals between time periods, which may lead these individuals to feel as though they have a fresh start.

#### IV. CAUSAL EVIDENCE FOR THE FRESH START EFFECT AND AN UNDERLYING MECHANISM

While the first paper we reviewed provides correlational evidence for the fresh start effect using field archival data,<sup>26</sup> the second paper we reviewed establishes the *causal* effect of temporal landmarks on goal motivation through a series of laboratory experiments.<sup>27</sup> For example, in one experiment (Study 1A), the researchers examined whether individuals were more likely to engage in activities conducive to goal pursuit on a day highlighted as a temporal landmark compared to when it was described as an ordinary day.<sup>28</sup> Specifically, in early March 2014, researchers recruited online survey participants who wanted to receive a reminder about a goal they planned to begin pursuing in April.<sup>29</sup> Participants chose when they would like to receive the reminder from a list of seven days (March 18 to 24, 2014) and were randomly assigned to one of two experimental conditions.<sup>30</sup> In the two conditions, the seven days were objectively the same, but the date of March 20, 2014, was framed differently, either as a temporal landmark ("Thursday; The First Day of Spring 2014") or as an

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21. *Id.*

22. Todd Rogers, Katherine L. Milkman & Kevin G. Volpp, *Commitment Devices: Using Initiatives to Change Behavior*, 311 JAMA 2065 (2014).

23. Dai, Milkman & Riis, *Fresh Start*, *supra* note 3, at 2574.

24. *Id.* at 2576.

25. One exception is that the relationship between birthdays and the likelihood of creating a commitment contract remained positive but became statistically insignificant. *Id.* at 2575.

26. *See id.* at 2563–82.

27. *See* Dai, Milkman & Riis, *Imperfections*, *supra* note 3.

28. *Id.* at 1928–29.

29. *Id.* at 1928.

30. *Id.* at 1929.

ordinary day (“Thursday; The Third Thursday in March 2014”).<sup>31</sup> Consistent with their hypothesis that goal-related activities are more appealing on temporal landmarks, researchers found that people chose to receive a goal reminder on March 20 more frequently when the date was highlighted as the first day of spring – a temporal landmark (25.61%) – than when it was labeled a normal day (7.23%).<sup>32</sup>

The researchers also tested their proposed psychological mechanism underlying the “fresh start effect” – that is, that temporal landmarks psychologically disconnect people from their imperfect past selves and thus motivate them to pursue their aspirations and behave in line with their positive self-view. In one experiment (Study 4), researchers recruited online survey participants who failed to achieve a goal in the past and wanted to pursue that same goal again in the near future.<sup>33</sup> Participants were asked to imagine that they had recently moved to a new apartment.<sup>34</sup> Building on past research showing that first experiences are perceived as more momentous<sup>35</sup> and more likely to serve as a temporal landmark, the researchers randomly assigned participants to one of two conditions and manipulated whether the apartment move was their first move (and thus felt like a salient temporal landmark). Specifically, participants in the temporal landmark condition were asked to imagine that they moved to a new apartment for the first time since their arrival to the city nine years ago, whereas those in the control condition were asked to imagine that they had been moving every year for the past nine years.<sup>36</sup> Then participants rated (a) how motivated they would be to begin pursuing the goal they described earlier in the survey and (b) how psychologically separated they would feel from their imperfect past selves that previously failed to achieve the goal.<sup>37</sup> Researchers found that when the apartment move was described as a first experience and became a salient temporal landmark people felt more disconnected from their imperfect past selves, which further increased their motivations to tackle their goals as compared to when the same apartment move was described as a routine experience and did not feel like a temporal landmark.<sup>38</sup>

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31. *Id.*

32. *Id.*

33. *Id.* at 1932–33.

34. *Id.* at 1933.

35. See Robyn A. LeBoeuf, Elanor F. Williams & Lyle A. Brenner, *Forceful Phantom Firsts: Framing Experiences as Firsts Amplifies Their Influence on Judgment*, 51 J. MKTG. RES. 420 (2014).

36. Dai, Milkman & Riis, *Imperfections*, *supra* note 3, at 1933.

37. *Id.*

38. *Id.*

## V. A FIELD APPLICATION OF THE FRESH START EFFECT

The two papers discussed above demonstrate that people are more engaged in aspirational activities following naturally arising temporal landmarks<sup>39</sup> and on days highlighted as temporal landmarks.<sup>40</sup> To capitalize on these insights, Dai and her colleagues conducted a nine-month field experiment in the domain of retirement savings.<sup>41</sup> The experiment included 8682 employees at four U.S. universities who received a mailing encouraging them to increase their contributions to a retirement savings plan.<sup>42</sup> Participants were randomly assigned to one of three experimental conditions: the no-delay condition, in which participants were invited to increase saving immediately; the standard-delay condition, in which participants were offered two options and could increase saving either immediately or after a time delay (such as two months); and the fresh-start-delay condition, in which participants were offered two options and could increase saving either immediately or after a time delay that referenced a temporal landmark (such as after the participant's next birthday).<sup>43</sup> Participants in all conditions had the option to increase their contributions immediately.<sup>44</sup> The experimental conditions differed in the presence and framing of the second option, which allowed the researchers to test the efficacy of two "nudge" interventions in improving retirement savings: a pre-commitment nudge and a fresh-start nudge.<sup>45</sup>

A pre-commitment nudge encourages individuals to commit to a decision in advance. Individuals typically myopically overweigh the present and neglect their future utilities,<sup>46</sup> which is one reason for undersaving. Such *present bias* can be mitigated by a pre-commitment nudge because individuals are more likely to consider long-term benefits when making decisions for the future as compared to making decisions for the present.<sup>47</sup> This insight is one of several psychological principles that contribute to the success of the Save More Tomorrow ("SMarT") program,<sup>48</sup> a savings program that allows individuals to pre-commit to diverting a subset of their future pay raises to their retirement

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39. See Dai, Milkman & Riis, *Fresh Start*, *supra* note 3, at 2566–76.

40. See Dai, Milkman & Riis, *Imperfections*, *supra* note 3, at 1928–29, 1932–33.

41. See Beshears, Dai, Milkman & Benartzi, *supra* note 3.

42. *Id.* at 1–2.

43. *Id.* at 8–9.

44. *Id.* at 3.

45. *Id.* at 5–6.

46. See generally Ted O'Donoghue & Matthew Rabin, *Doing It Now or Later*, 89 AM. ECON. REV. 103 (1999).

47. See generally Katherine L. Milkman, Todd Rogers & Max H. Bazerman, *Harnessing Our Inner Angels and Demons: What We Have Learned About Want/Should Conflicts and How That Knowledge Can Help Us Reduce Short-Sighted Decision Making*, 3 PERSP. ON PSYCHOL. SCI. 324 (2008).

48. Richard Thaler & Shlomo Benartzi, *Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving*, 112 J. POL. ECON. S164 (2004).



savings account.<sup>49</sup> Inspired by the SMarT program, Dai and her colleagues tested a modified pre-commitment nudge and presented a clean test of the effect of offering a pre-commitment option on retirement savings.<sup>50</sup> Specifically, participants in the standard-delay condition of the field experiment were simultaneously offered the option to increase savings immediately and the option to increase savings in the future (at a time delay of two-to-six months pre-specified on the mailing).<sup>51</sup> Since all participants were asked to mail back the response card by the same deadline, those who chose to increase savings later essentially pre-committed to save more in the future.<sup>52</sup>

The fresh-start nudge was applied to the fresh-start-delay condition in which participants had both an opportunity to increase savings immediately and an opportunity to increase savings at a time delay that was described in relation to a temporal landmark (such as “following your next birthday” or “following New Year’s”).<sup>53</sup> These participants received objectively identical options as those in the standard-delay condition because the length of the time delay was held constant between two conditions, with the only difference being whether the delayed savings option was associated with an upcoming temporal landmark.<sup>54</sup> The researchers expected that the fresh-start nudge – combining pre-commitment with a future temporal landmark – could attract more individuals who would not have contributed to the retirement plan otherwise, leading to more savings than the pre-commitment nudge alone.

First, the researchers compared the no-delay condition (in which people only had the option to increase savings immediately) with the standard-delay condition to assess the efficacy of offering a pre-commitment option. To their surprise, the pre-commitment nudge decreased average contribution rates by 0.14 percentage points, which is statistically significant, relative to the no-delay condition, in which participants only had the option to increase savings immediately.<sup>55</sup> But, as the researchers predicted, the fresh-start nudge (combining pre-commitment with a time delay associated with a temporal landmark)

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49. *Id.* at S167–68.

50. *See* Beshears, Dai, Milkman & Benartzi, *supra* note 3, at 3.

51. *Id.* at 8.

52. *Id.* at 3–4.

53. *Id.* at 5.

54. *Id.* at 9.

55. *Id.* at 18. The negative effect of the pre-commitment nudge seemingly contradicts past research on present bias as well as the widespread success of the SMarT program. However, this surprising negative effect reveals an often-overlooked feature of “nudges” – that is, nudges can leak information about designers’ implicit recommendations. A careful discussion about this issue is beyond the scope of this article. Interested readers are encouraged to read Beshears, Dai, Milkman & Benartzi, *supra* note 3, which explains the negative effect of the pre-commitment nudge based on an information leakage account, provides empirical evidence for the account, and offers important implications for choice architects who intend to modify well-established nudge techniques for new settings. *Id.*

boosted savings relative to the pre-commitment nudge alone.<sup>56</sup> Specifically, the average contribution rates were 0.10 percentage points higher in the fresh-start-delay condition than in the standard-delay condition where the objectively identical delayed option was not framed in terms of temporal landmarks.<sup>57</sup> In particular, when the temporal landmark was an individual's birthday, average contribution rates were increased by 0.22 percentage points, which is statistically significant, compared to the standard-delay condition.<sup>58</sup> Finally, average contribution rates insignificantly differed between the fresh-start-delay and the no-delay conditions,<sup>59</sup> suggesting that associating a time delay with a future temporal landmark mitigated the negative effects of offering a standard-delay option on savings. This experiment provides the first test of a fresh-start nudge in a field setting. The results suggest that highlighting future temporal landmarks as an opportunity for positive behavior change (without a delayed option) might spur future-oriented decisions, such as saving more for retirement.

## VI. CONCLUSIONS

This article summarizes three recent research papers that test the fresh start effect using large-scale archival datasets, laboratory experiments, and a field experiment. Taken together, these papers demonstrate that individuals plan to, or actually do, engage in a variety of goal-related activities (such as attending the gym, creating a commitment contract, signing up to receive a goal reminder, and increasing retirement savings) more frequently following temporal landmarks than on other dates. One mechanism underlying this fresh start effect is that temporal landmarks create psychological separation from an “old me” and motivate people to behave in accordance with the image of a “new me.”

These results suggest new ways policymakers may “nudge” individuals to follow through on their good intentions. Those recently released from prison and, relatedly, those with previous juvenile records could especially benefit from recognizing opportunities for fresh starts. These individuals have high rates of criminal recidivism,<sup>60</sup> and federal and local governments have strived to provide opportunities for those previously incarcerated to reintegrate them back into society – for example, by expanding access to technical training and jobs, as well as offering reentry education programs.<sup>61</sup> These assistance and

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56. *Id.* at 19–22.

57. *Id.* at 19–20.

58. *Id.* at 20.

59. *Id.* at 21–22.

60. See *Recidivism*, NAT'L INST. JUST. (June 17, 2014), <https://www.nij.gov/topics/corrections/recidivism/Pages/welcome.aspx>.

61. See Press Release, WHITE HOUSE OFFICE OF PRESS SEC'Y, Fact Sheet: President Obama Announces New Actions to Promote Rehabilitation and Reintegration for the Formerly-Incarcerated (Nov. 2, 2015), <https://obamawhitehouse.archives.gov/the-press-office/2015/11/02/fact-sheet-president-obama-announces-new-actions-promote-rehabilitation>.

education programs, however, have difficulty attracting individuals with a criminal record to participate in the first place. Those individuals may be more receptive to taking active steps towards change following temporal landmarks (such as a birthday, a move to a new neighborhood, and the birth of a child) when they feel a sense of separation from their old, imperfect selves. Thus, encouraging them to obtain assistance and training following temporal landmarks may be more effective in facilitating change. Importantly, young adults can potentially have their juvenile records expunged following their eighteenth birthdays.<sup>62</sup> Thus, for juveniles, highlighting the fresh start inherent in their eighteenth birthdays may not only separate them from the past via a literal clean slate but also equip them with a cognitive motivation not to taint the clean record.

Temporal landmarks may have a particularly strong impact on engagement in activities that only require a spike in motivation (e.g., opening a retirement savings account, obtaining a physical examination, and signing up for an education program). The positive effect of temporal landmarks may not be sufficiently long lasting to sustain engagement in activities that require persistence. Dai and her colleagues came to this speculation after conducting a large-scale field experiment on medication adherence in collaboration with Humana, a U.S. insurance company.<sup>63</sup> More than 13,000 Humana customers received one reminder mailing that encouraged them to regularly take medications and contained a magnet on which customers could write their specific plans for taking their medications.<sup>64</sup> Sending reminders to customers around temporal landmarks (either three weeks after New Year's Day or two weeks within a customer's birthday) did not significantly increase medication adherence over the three-month observation period, as compared to sending reminders on other normal days.<sup>65</sup> One potential explanation for the failure of the fresh-start-based intervention in this field experiment is that improving medication adherence requires persistence, while the increase in motivation following temporal landmarks may only last for a short period.

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62. See *50-State Comparison: Judicial Expungement, Sealing, and Set-Aside*, RESTORATION RTS. PROJECT (June 2017), <http://ccresourcecenter.org/resources-2/restoration-of-rights/50-state-comparisonjudicial-expungement-sealing-and-set-aside/> (providing a fifty-state survey regarding the practice of expunging records for juvenile offenders after the age of majority). The curious reader should refer to the entire survey, as rules for expungement vary across jurisdictions, and pay particular attention to the rules of Alaska, Arizona, the District of Columbia, Iowa, Michigan, Montana, Oregon, Pennsylvania, South Carolina, Utah, West Virginia, and Wyoming, which the authors believe may provide opportunities for the fresh start effect.

63. Hengchen Dai, David Mao, Jason Riis, Kevin G. Volpp, Michael J. Relish, Victor F. Lawnicki & Katherine L. Milkman, *Effectiveness of Medication Adherence Reminders Tied to "Fresh Start" Dates: A Randomized Clinical Trial*, 2 JAMA CARDIOLOGY 453 (2017).

64. *Id.*

65. *Id.* at 454.

Even fleeting fresh-start feelings, however, can be valuable; many simple actions can have a long-lasting effect (such as signing up for a 401(k), getting a vaccination, and taking a preventive test), yet people often procrastinate on tackling these one-shot goals. For example, people who have been incarcerated may realize that enrolling in a mentorship program or signing up for a training program can reduce their rates of recidivism, but they may repeatedly put off taking these desirable actions. The increase in motivation associated with fresh-start feelings following temporal landmarks may be sufficient to spur them to begin to attend these programs and services. Once incarcerated individuals begin, the social accountability and support they receive may reduce recidivism and benefit them in the long run. In summary, future research that examines how to design effective interventions based on the “fresh start effect” for different populations would be valuable because temporal landmarks have the potential to help individuals feel relieved of their past imperfections and identify opportunities for self-improvement.

