**Supplement**

**Study 2: Additional Details and Analyses**

**Method**

This first wave of data collection took place between September 26th and September 28th, 2016.

Approximately two weeks later, participants who had completed Wave 1 were invited to participate in another study (which was in fact the same survey as in Wave 1). Three hundred and seven people (*M*age = 22.77, *SD* = 3.77 years; 78.1% women) participated for $3. There were no differences in terms of age or gender between the 307 who completed both waves of data collection and the 201 people who only completed Wave 1 (*p*s > .54). This second wave of data collection took place between October 11th and October 12th, 2016.

Approximately three months later, participants who had completed Wave 1 of the data collection were again invited to participate in another study (which was the same survey as in Waves 1 and 2). One hundred and eighty-seven people (*M*age = 22.61, *SD* = 3.54 years; 75.9% women) participated for $3. There were no differences in terms of age or gender between the 187 people who completed all three waves and the 120 people who completed the first two waves (*p*s > .24), nor were there any age or gender differences between the 120 people who completed all three waves and the 201 people who just completed wave 1 (*p*s > .29).

**Results**

***Preliminary Analyses****.* Because Study 2 involved an assessment of test-retest reliability, we first examine whether there were any differences in our central variables (i.e., when the present ends, when the future starts, and the objective measure of when the present ends) between the groups of participants who took the survey once, twice, or all three times. There were no differences in these three central variables (as measured during Wave 1) between the participants who completed the first two waves of data collection and the people who only completed Wave 1 (*p*s > .26). There were also no differences on the three central variables between the group of people who completed all three waves and those who completed only the first two waves (*p*s > .71), nor were there any differences between the participants who completed all three waves and those who just completed Wave 1 (*p*s > .40).

For Wave 1, the relationship among the central variables was relatively strong: Perceptions of when the present ends on the dots task was positively correlated with perceptions of when the future begins, *r*(506) = .72, *p* < .001, and these perceptions of when the present ends (as reported on the dots task) were also positively correlated with the forced choice measure of when the present ends, *r*(506) = .33, *p* < .001. Perceptions of when the future begins were also positively correlated with the forced choice measure of when the present ends, *r*(506) = .42, *p* < .001. Notably, by first standardizing the three scores, we were also able to establish that the three variables showed strong internal reliability (α = .74).

***Test-retest reliability for the individual measures***. The individual measures also showed strong test-retest reliability, though understandably not as strong as the composite measure. For perceptions of when the present ends (on the dots task), reliability from Wave 1 to Wave 2 was *r*(305) = .57, *p* < .001, Wave 1 to Wave 3 was *r*(185) = .39, *p* < .001, and from Wave 2 to Wave 3 was *r*(185) = .36, *p* < .001. Another way to assess reliability is to simply look at the absolute difference in scores on the dots task from one wave to another. Doing so also demonstrated strong test-retest reliability, in that from any wave to another, the median difference between the choice of dots was 2 and the mode was 0.

For perceptions of when the future begins, reliability from Wave 1 to Wave 2 was *r*(305) = .63, *p* < .001, Wave 1 to Wave 3 was *r*(185) = .51, *p* < .001, and from Wave 2 to Wave 3 was*r*(185) = .55, *p* < .001. Looking at the difference in scores on the dots task from one wave to another also demonstrated strong test-retest reliability in that from Wave 1 to Wave 2, the median difference between scores was 3 and the mode was 0, from Wave 1 to Wave 3, the median difference between scores was 4 and the mode was 0, and from Wave 2 to Wave 3, the median difference between scores was 3 and the mode was 0.

For perceptions of when the present ends on the forced-choice task, reliability from Wave 1 to Wave 2 was *r*(305) = .73, *p* < .001, Wave 1 to Wave 3 was *r*(185) = .68, *p* < .001, and from Wave 2 to Wave 3 was*r*(185) = .68, *p* < .001. Looking at the difference in scores on the 9-point scale from one wave to another also demonstrated strong test-retest reliability in that from Wave 1 to Wave 2, the median difference between scores was 1 and the mode was 0, from Wave 1 to Wave 3, the median difference between scores was 1 and the mode was 0, and from Wave 2 to Wave 3, the median difference between scores was 0 and the mode was 0.

**Study 2, Post-test 2**

**Method**

Second, we ran another post-test in which 198 Mechanical Turk participants (*M*age = 37.88, *SD* = 11.69 years; 40.6% women) again completed the dots task and gave open-ended responses describing their thoughts regarding how they answered the questions. In this version, however, we asked the participants themselves to code their responses using the same categories from the first post-test (with representative examples written alongside each category option). Finally, participants responded to the forced-choice question regarding when the present ends.

**Results**

Again, a majority of participants coded their answers as belonging to either the continuous time or intuition-based category. Of the 198 participants who responded to the question regarding when the present ends, 108 (54.5%) gave an answer based on a sense of continuous time, 37 (18.7%) gave an intuition-based answer, 32 (16.2%) gave an event-based answer, 11 (5.6%) gave a lifetime-based answer, and 10 (5.1%) classified themselves as in a miscellaneous category. Of the 197 participants who responded to the question regarding when the future starts, 99 (50.3%) gave an answer based on a sense of continuous time, 40 (20.3%) gave an intuition-based answer, 27 (13.7%) gave an event-based answer, 18 (9.1%) gave a lifetime-based answer, and 13 (6.6%) classified themselves as in a miscellaneous category.

Because we had a slightly larger distribution across categories in this second post-test, we had sufficient statistical power to determine whether there were any differences between people who conceptualized time in the manner that we had intended (here, 73.2% for the present ends question) and those who did not (here, 21.8% for the present ends question) in responding to the dots task. Using the composite measure (i.e., the average of the standardized scores of when the present ends on the dots task, when the future begins on the dots task, and the forced-choice measure regarding when the present ends), a contrast test indicated that participants in the continuous and intuition-based categories had lower composite scores (i.e., felt that the present ended sooner; *M =* -.11 and *M* = -.17, respectively) than participants who fell into the event-based and lifetime-based categories (*M =* .54 and *M* = .45 respectively), *t*(193) = -3.97, *p* < .001. Similar contrasts were obtained by looking at the individual components: when the present ends on the dots task, *t*(190) = -1.49, *p* = .14, when the future begins on the dots task, *t*(190) = -2.11, *p* < .05, and the forced-choice measure, *t*(191) = -6.73, *p* < .001.

**Study 3a**

**Method**

One hundred and fifty-two participants (*M*age = 35.68 years, *SD* = 10.18 years; 41.4% women) from Amazon’s Mechanical Turk subject pool participated for $.30. Nine participants failed an instructional manipulation check, and two participants failed to complete the survey, leaving a final sample of 141 participants.

To assess their sense of when the present ends, participants first completed the same dots task from Study 2. Next, participants completed a monetary allocation task in which they were asked to imagine that, after paying their bills and necessary expenses for the month, they realized that they had $1000 remaining in their bank account. They were asked how they would like to divide the full $1000 between two different options: (1) Use the money to purchase something fun or special to use immediately and (2) Put it into a long-term savings account to be used later. They were free to report any amount (from $0 to $1000) for each, provided that the sum across the two options totaled $1000. Participants then indicated when they felt the present ends in objective terms, using the 9-point scale from Studies 1 and 2 (“Right now,” “1 second to 1 minute from now,” and so forth). Finally, participants completed demographic questions (gender, age, income) and then the IMC. See Table S1 for the correlations among all measures from Study 3a.

**Results & Discussion**

As in the earlier studies, a majority of participants felt that the present ended rather soon, as reflected by the low mean on the line of check boxes (*M* = 5.65, *SD* = 5.60), and that the future started later (*M* = 10.69, *SD* = 7.91). Participants also allocated a majority of the hypothetical $1000 toward the long-term savings account (*M* = $715.71, *SD* = $231.13).

Because of the skew in these variables, we conducted parametric and non-parametric correlation analyses to examine these relationships. Using a standardized composite of when the present ends, when the future starts, and the 9-point objective measure of when the present ends (α = .82), we found a negative relationship between when the present ends and monetary allocation, *r*(139) = -.22, *p* < .01;Spearman’s ρ(139) = -.28, *p* < .001. In other words, the sooner the present was perceived as ending, the more money participants allocated to a long-term savings account.

Perceptions of when the present ends were negatively correlated with long-term monetary allocation, *r*(139) = -.17, *p* = .05; Spearman’s ρ(139) = -.25, *p* < .01. Similarly, the sooner the future began, the more money participants allocated to long-term savings, *r*(139) = -.28, *p* < .001;Spearman’s ρ(139) = -.30, *p* < .001. Using the 9-point, more objective measure of when the present ends, we again found a negative relationship with long-term monetary allocation using the nonparametric test, Spearman’s ρ139) = -.18, *p* < .05, and a directional, though non-significant relationship using the parametric test, *r*(139) = -.12, *p* = .17.

In an attempt to reduce the noise and skew in the distribution of monetary allocations (the most skewed of our central variables; skew = -1.04), we squared the monetary allocation responses (skew = -.29). Using this transformation, we again found that perceptions of when the present ends were negatively correlated with monetary allocation, *r*(139) = -.19, *p* < .05; Spearman’s ρ(139) = -.25, *p* < .01. Similarly, the sooner the future was perceived to begin, the more money participants allocated to long-term savings, *r*(139) = -.30, *p* < .001; Spearman’s ρ(139) = -.30, *p* < .001. Using the 9-point, more objective measure of when the present ends, we found a similar negative relationship, *r*(139) = -.16, *p* = .07; Spearman’s ρ(139) = -.18, *p* < .05[[1]](#footnote-1). The composite measure showed the same pattern, *r*(139) = -.25, *p* < .01; Spearman’s ρ(139) = -.28, *p* < .001. See Table 3 for the correlations among all measures from Study 3a.

**Study 3, Additional Details**

**Method**

Per standard practices with Qualtrics Panels to ensure payment to the platform only for usable data, if respondents did not consent to participate in the study, were outside of the predetermined age range, failed the instructional manipulation check, responded after the gender quota was met, or subsequently sped through the survey (responding in less than 1/3 of the median amount of time that it took pilot participants to complete the survey, an exclusion criteria that Qualtrics Panels automatically implements), they were deemed ineligible by the hosting platform and were paid $.10 for their time. Seven hundred and fifty-two people fell into one of these categories; the 524 respondents we report here are those who met all of the predetermined criteria for usable data per the above combination of rules designed by the researchers and the Qualtrics Panels platform. Note that this exclusion criteria (and rate of usable data) differs from the other studies reported in the present investigation but primarily as a function of the platform used for data collection (as the Qualtrics Panels platform charges a higher rate per respondent and, accordingly, guarantees high-quality data points).

Below, we report detailed descriptions of the measures used in Study 3b.

**Behavior Identification Form (BIF; Vallacher & Wegner, 1989).** We employed a modified 15-item version of the BIF, which assesses the degree to which people classify behaviors in either abstract or concrete terms. For each item, participants have to choose the best descriptor for a given action (e.g., “making a list”), where one descriptor is more abstract (“getting organized”) and one is more concrete (“writing things down”). Higher scores are associated with the tendency to take more a more abstract, rather than concrete, viewpoint (*M* = 7.14, *SD* = 3.63, range: 0-15; α= .79).

**Future Self-Continuity (FSC; Ersner-Hershfield, Garton, Ballard, Samanez-Larkin, & Knutson, 2009).** In two items, FSC measures the extent to which people feel connected and similar with a future self 10 years from the present. Participants are asked to pick from a group of 7 sets of overlapping circles that best represent how connected and how similar they feel to their future selves (the circle sets range from non-overlapping to almost complete overlap; connected: *M* = 4.60, *SD* = 2.07, range: 1-7; similar: *M* = 5.06, *SD* = 1.97, range: 1-7).

**Future Time Perspective (FTP; Carstensen & Lang, 1996).** The FTP is a ten-item scale that measures the extent to which an individual holds a long or short future time perspective (e.g., “Most of my life lies ahead of me”). Each question is answered on a 7-point scale (ranging from 1, “very untrue”, to 7, “very true”). Higher scores are associated with a longer future time perspective (*M* = 4.59, *SD* = 1.29, range: 1-7; α = .88).

**Temporal Duration Estimate (Zauberman, et al., 2009)**. The Temporal Duration Estimate is a one-item question that uses a slider bar to assess how long participants consider the duration between two intervals of time. Specifically, participants are asked “how long do you consider the duration between today and 1 year from now?”. The slider bar starts in the middle of a bar that has anchors of “very short” on the left and “very long” on the right. Scores range from 0 to 100, and the more a participant drags the slider to the left, the more they would feel that the duration between today and a year from now is a short amount of time (a score of 0), and the more they drag the slider to the right, the more they would feel that the duration is a very long one (a score of 100; *M* = 46.93, *SD* = 28.87, range: 0-100).

**Future Anhedonia (Kassam, Gilbert, Boston, & Wilson, 2008).**The Future Anhedonia measure assesses the degree to which people believe that hedonic states will be less intense in the future. It consists of one question that asks participants to imagine receiving a $20 check in the mail either today or in a year. Participants are asked, “at the moment you receive it, would you be happier receiving it tomorrow, or would you be happier receiving it a year from now?”. Scores range from 1 (“much happier at the moment receiving it tomorrow”) to 7 (“much happier at the moment receiving it in a year”), and lower scores are associated with more future anhedonia (*M* = 2.68, *SD* = 2.03, range: 1-7).

**Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003).** The TIPI contains two questions (using 7-point scales) for each of the five personality dimensions in the Big Five (Openness to Experiences, Conscientiousness, Extraversion, Agreeableness, and Neuroticism).

**Short Zimbardo Time Perspective Inventory (SZTPI-15; Zhang, Howell, & Bowerman, 2013).** The SZTPI-15 is a 15-item questionnaire that contains 3 questions for each of the five dimensions of Zimbardo’s original 56-item Time Perspective Inventory (Zimbardo & Boyd, 1999): past positive, past negative, present hedonism, present fatalism, and future (see Zimbardo & Boyd, 1999, for a full description of each of these dimensions). Although the shortened version is slightly less reliable, it still has good psychometric convergence with the original version.

**Results**

Note that degrees of freedom vary slightly across analyses, due to some non-responses for some of the scale items.

**Replication***.* First, as in Study 3a, we conducted non-parametric and parametric correlation analyses to examine the relationship between when the present ends and monetary allocation. Again, we found that perceptions of when the present ends were negatively correlated with long-term monetary allocation (*r*(521) = -.10, *p* < .05; Spearman’s ρ(521) = -.10, *p* < .05). Similarly, the sooner the future started, the more participants allocated to long-term savings (*r*(521) = -.11, *p* < .05; Spearman’s ρ(521) = -.10, *p* < .05). Using the 9-point, more objective measure of when the present ends, we found a negative relationship with long-term monetary allocation using the nonparametric test (Spearman’s ρ(521) = -.10, *p* < .05), and a directional, though non-significant relationship using the parametric test (*r*(521) = -.07, *p* = .10). Using the standardized composite measure (α = .70), we similarly found a negative relationship (*r*(521) = -.12, *p* < .01; Spearman’s ρ(521) = -.13, *p* < .01).

Second, as in Study 3a, we transformed the monetary allocation (skew = -.91) by squaring it (skew = -.17). Doing so, we again found that perceptions of when the present ends were negatively correlated with monetary allocation (*r*(521) = -.11, *p* < .05; Spearman’s ρ(521) = -.10, *p* < .05), as were perceptions of when the future starts (*r*(521) = -.10, *p* < .05; Spearman’s ρ(521) = -.10, *p* < .05). We found a similar negative relationship for the 9-point, more objective measure of when the present ends, (*r*(521) = -.09, *p* < .05; Spearman’s ρ(521) = -.09, *p* < .05), as well as for the composite measure (*r*(521) = -.13, *p* < .01; Spearman’s ρ(521) = -.13, *p* < .01)

**Relationship to other constructs**. We next examined the relationship between perceptions of when the present ends and other related constructs. Although Table S1 provides a full account of these relationships, using the non-parametric Spearman’s ρ, we highlight those identified as most meaningful here. Results indicated that perceiving a longer present was positively associated with future anhedonia, future time perspective, temporal duration estimates, age, and the present hedonism and past positive components of the Short Zimbardo Time Perspective Inventory (SZTPI; all ρs >.09, all *p*s < .05). Perceptions of when the present ends were not significantly related to the tendency to think abstractly or concretely (on the BIF), the Big 5 personality inventory, future self-continuity, education, and the past negative, present fatalism, and future subcomponents of the SZTPI (all ρs <.05, all *p*s > .06).

The objective 9-point measure of when the present ends was positively correlated with temporal duration estimates, future anhedonia, extraversion, and the present hedonism and future subcomponents of the SZTPI (all ρs > .10, all *p*s < .05). The objective measure was not related to the tendency to think abstractly or concretely, future time perspective, agreeableness, conscientiousness, emotional stability, openness, the past negative, past positive, present fatalism components of the SZTPI, age, and education (all ρs <.08, all *p*s > .08), but was negatively related to future self continuity (ρ(522) = -.12, *p* < .01).

The standardized composite measure was positively related to future anhedonia, future time perspective, temporal duration estimates, extraversion, the past positive, present fatalism, and present hedonism components of the SZTPI, and age (all ρs > .10, all *p*s < .05). The composite measure was not related to the tendency to think abstractly, conscientiousness, agreeableness, emotional stability, openness, future self-continuity, and the past negative and future aspects of the SZTPI (all ρs <.08, all *p*s > .06), and was negatively related to education (ρ(520) = -.09, *p* < .05).

**Relationship to monetary allocation, controlling for other constructs.** Finally, we wanted to assess the relationship between perceptions of when the present ends and monetary allocation, controlling for the other constructs. In order to assess the individual contributions of each of the related constructs, we conducted a series of step-wise linear regressions in which we regressed monetary allocation on each of the three central variables (as well as the composite) and then controlled for the other constructs in relevant groupings in successive steps (Step 2: age, sex, and education; Step 3: concrete vs. abstract thinking style; Step 4: future-oriented variables (future self-continuity, future time perspective, temporal duration estimates, and future anhedonia); Step 5: personality variables; Step 6: the Short Zimbardo Time Perspective Inventory).

As can be seen in Table S2, perceptions of when the present ends remain a significant predictor of monetary allocation when controlling for all groups of variables, except for the SZTPI measures, when the coefficient drops from -.08 to -.06 (*p* = .16). The general patterns were similar for perceptions of when the future starts (Table S3), the forced choice measure (Table S4), though not as robust, and the composite measure (Table S5).

**Study 6c, Additional Analyses**

**Factorial Analysis for Logistic Regression**. Using a binary factorial logistic regression with a 2(Division Location: short, long) x 2(Division Appearance: sharp, blurry) design, we find a main effect of Division Location, with the Long Present Conditions (*M* = .45) being less likely to sign up for the saving gift card (i.e., the Wealthfront gift card) compared to the Short Present Conditions (*M* = .51), B = -.40, Wald 2(1) = 8.93, *p* < .01. There was also a main effect of Division Appearance, with the Blurry Division conditions being less likely to sign up for the Wealthfront gift card (*M* = .47) compared to the Sharp Division conditions (*M* = .50), B = -.28, Wald 2(1) = 4.25, *p* < .05. The interaction between Division Location and Division Appearance, however, did not reach traditional levels of significance, B = .31, Wald 2(1) = 2.59, *p* = .11[[2]](#footnote-2).

**References**

Carstensen L. L., Lang F. R. (1996). *Future time perspective scale*. Stanford, CA: Department of Psychology, Stanford University.

Ersner-Hershfield, H., Garton, M. T., Ballard, K., Samanez-Larkin, G. R., & Knutson, B. (2009). Don't stop thinking about tomorrow: Individual differences in future self-continuity account for saving. *Judgment and Decision Making, 4*(4), 280-286. Journal.sjdm.org/9310/jdm9310.pdf

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*(6), 504-528. doi:10.1016/s0092-6566(03)00046-1

Kassam, K. S., Gilbert, D. T., Boston, A., & Wilson, T. D. (2008). Future anhedonia and time discounting. *Journal of Experimental Social Psychology, 44*(6), 1533-1537. doi:10.1016/j.jesp.2008.07.008

Vallacher, R. R., & Wegner, D. M. (1989). Levels of personal agency: Individual variation in action identification. *Journal of Personality and Social Psychology, 57*(4), 660-671. doi:10.1037/0022-3514.57.4.660

Zauberman, G., Kim, B. K., Malkoc, S. A., & Bettman, J. R. (2009). Discounting time and time discounting: Subjective time perception and intertemporal preferences. *Journal of Marketing Research, 46*(4), 543-556. doi:10.1509/jmkr.46.4.543

Zhang, J. W., Howell, R. T., & Bowerman, T. (2013). Validating a brief measure of the Zimbardo Time Perspective Inventory. *Time & Society, 22*(3), 391-409. doi:10.1177/0961463x12441174

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology, 77*(6), 1271-1288. doi:10.1037/0022-3514.77.6.1271

**Table S1.**

*Correlations among measures from Study 3a*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | 1 | 2 | 3 | 4 | 5 |
| 1. When Present Ends | -- |  |  |  |  |
| 2. When Future Starts | .78\*\*\* | -- |  |  |  |
| 3. Forced Choice | .58\*\*\* | .60\*\*\* | -- |  |  |
| 4. Composite Measure | .87\*\*\* | .92\*\*\* | .80\*\*\* | -- |  |
| 5. Long-Term Savings | -.25\*\* | -.30\*\*\* | -.18\* | -.28\*\*\* | -- |

Note: Correlations are Spearman’s *ρ*

\**p* < .05. \*\**p* < .001. *\*\*\*p* < .001

**Table S2.**

*Correlations Among All Measures From Study 3b*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Central Variables |  |  |  |  |  |  |  |  |  |  |
| 1. When Present Ends | -- |  |  |  |  |  |  |  |  |  |
| 2. When Future Starts | .60\*\* | -- |  |  |  |  |  |  |  |  |
| 3. Forced Choice | .33\*\* | .43\*\* | -- |  |  |  |  |  |  |  |
| 4. Composite Measure | .78\*\* | .86\*\* | .71\*\* | -- |  |  |  |  |  |  |
| 5. Long-term Savings | -.10\* | -.10\* | -.10\* | -.13\*\* | -- |  |  |  |  |  |
| Thinking Style |  |  |  |  |  |  |  |  |  |  |
| 6. Abstract Thinking | .06 | .08 | .06 | .08 | -.08 | -- |  |  |  |  |
| Future-Oriented Variables |  |  |  |  |  |  |  |  |  |  |
| 7. FSC | -.02 | -.05 | -.12\*\* | -.08 | .15\*\* | .07 | -- |  |  |  |
| 8. FTP | .15\*\* | .16\*\* | .05 | .14\*\* | -.07 | .23\*\* | .08 | -- |  |  |
| 9. Temporal Duration | .09\* | .16\*\* | .14\*\* | .16\*\* | -.17\*\* | -.02 | -.11\* | .09\* | -- |  |
| 10. Future Anhedonia | .15\*\* | .13\*\* | .14\*\* | .16\*\* | .02 | .07 | -.01 | .11\* | .05 | -- |
| Personality |  |  |  |  |  |  |  |  |  |  |
| 11. Extraversion | .05 | .11\* | .10\* | .12\*\* | -.02 | .19\*\* | .06 | .32\*\* | .03 | .09\* |
| 12. Agreeableness | -.07 | -.09 | -.04 | -.08 | .20\*\* | .08 | .23\*\* | .18\*\* | -.12\*\* | -.11\* |
| 13. Conscientiousness | -.07 | .01 | .02 | -.01 | .13\*\* | .10\* | .28\*\* | .23\*\* | -.06 | -.07 |
| 14. Emotional Stability | -.04 | .05 | -.01 | .02 | .19\*\* | .12\*\* | .23\*\* | .23\*\* | -.07 | .03 |
| 15. Openness | -.01 | .02 | .04 | .02 | .01 | .20\*\* | .14\*\* | .34\*\* | -.06 | -.07 |
| SZTPI |  |  |  |  |  |  |  |  |  |  |
| 16. Past Negative | .03 | .04 | .04 | .04 | -.20\*\* | -.07 | -.20\*\* | -.16\*\* | .14\*\* | .05 |
| 17. Past Positive | .09\* | .09\* | .08 | .10\* | -.17\*\* | .24\*\* | .07 | .40\*\* | .04 | .11\* |
| 18. Present Fatalism | .10\* | .13\*\* | .07 | .12\*\* | -.13\*\* | -.17\*\* | -.12\*\* | -.27\*\* | .13\*\* | .09\* |
| 19. Present Hedonism | .15\*\* | .13\*\* | .10\* | .15\*\* | -.31\*\* | .12\*\* | -.09\* | .27\*\* | .19\*\* | .07 |
| 20. Future | .01 | .08 | .10\* | .08 | .02 | .18\*\* | .16\*\* | .34\*\* | .05 | .11\* |

**Table S1.** (continued)

*Correlations Among All Variables from Study 3b (continued)*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Personality |  |  |  |  |  |  |  |  |  |  |
| 11. Extraversion | -- |  |  |  |  |  |  |  |  |  |
| 12. Agreeableness | -.02 | -- |  |  |  |  |  |  |  |  |
| 13. Conscientiousness | .11\* | .36\*\* | -- |  |  |  |  |  |  |  |
| 14. Emotional Stability | .14\*\* | .44\*\* | .41\*\* | -- |  |  |  |  |  |  |
| 15. Openness | .33\*\* | .31\*\* | .35\*\* | .27\*\* | -- |  |  |  |  |  |
| SZTPI |  |  |  |  |  |  |  |  |  |  |
| 16. Past Negative | -.14\*\* | -.23\*\* | -.27\*\* | -.43\*\* | -.14\*\* | -- |  |  |  |  |
| 17. Past Positive | .20\*\* | .20\*\* | .20\*\* | .12\*\* | .23\*\* | -.04 | -- |  |  |  |
| 18. Present Fatalism | -.07 | -.24\*\* | -.24\*\* | -.27\*\* | -.30\*\* | .46\*\* | -.03 | -- |  |  |
| 19. Present Hedonism | .28\*\* | -.12\*\* | -.12\*\* | -.07 | .22\*\* | .18\*\* | .32\*\* | .25\*\* | -- |  |
| 20. Future | .15\*\* | .18\*\* | .44\*\* | .24\*\* | .22\*\* | -.05 | .42\*\* | -.10\* | .17\*\* | -- |

Note: Correlations are Spearman’s *ρ*; FSC = future self-continuity (the average of future self-similarity and future self connectedness); FTP = future time perspective

\**p* < .05. \*\**p* < .001. *\*\*\*p* < .001

**Table S2.**

*Summary of Hierarchical Regression Analysis, With Present Ends (N = 524)*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Model 1 | | | Model 2 | | | Model 3 | | | Model 4 | | |
| Variable | *B* | *SE B* | *β* | *B* | *SE B* | *β* | *B* | *SE B* | *β* | *B* | *SE B* | *β* |
| Present Ends | -2.93 | 1.30 | -.10\* | -2.73 | 1.30 | -.09\* | -2.64 | 1.30 | -.09\* | -2.72 | 1.31 | -.09\* |
| Education |  |  |  | 1.06 | 6.49 | .01 | 1.36 | 6.51 | .01 | .35 | 6.41 | .00 |
| Age |  |  |  | 2.19 | .64 | .15\*\* | 2.18 | .64 | .15\*\* | 1.67 | .69 | .11\* |
| Sex |  |  |  | 6.01 | 20.49 | .01 | 5.13 | 20.53 | .01 | 2.70 | 20.24 | .01 |
| Abstract Thinking |  |  |  |  |  |  | -2.50 | 3.04 | -.04 | -4.12 | 3.08 | -.06 |
| Future-Self Continuity |  |  |  |  |  |  |  |  |  | 12.89 | 5.92 | .10\* |
| Future Time Perspective |  |  |  |  |  |  |  |  |  | 2.35 | 8.44 | .01 |
| Temporal Duration |  |  |  |  |  |  |  |  |  | -1.21 | .36 | -.15\*\* |
| Future Anhedonia |  |  |  |  |  |  |  |  |  | 10.23 | 5.09 | .09\* |
| *R2* | 0.01 | | | 0.03 | | | 0.03 | | | 0.07 | | |
| *F* for change in *R*2 | 5.03\* | | | 3.93\*\* | | | 0.68 | | | 5.25\*\*\* | | |

**Table S2.** (continued)

*Summary of Hierarchical Regression Analysis, With Present Ends (N = 524)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Model 5 | | | Model 6 | | |
| Variable | *B* | *SE* *B* | *β* | *B* | *SE* *B* | *β* |
| Present Ends | -2.57 | 1.30 | -.09\* | -1.78 | 1.26 | -.06 |
| Education | .45 | 6.40 | .00 | -4.63 | 6.35 | -.03 |
| Age | .68 | .74 | .05 | .23 | .73 | .02 |
| Sex | 5.29 | 20.85 | .01 | 6.55 | 20.47 | .01 |
| Abstract Thinking | -4.62 | 3.10 | -.07 | -2.60 | 3.07 | -.04 |
| Future Self-Continuity | 9.25 | 5.99 | .07 | 7.35 | 5.81 | .06 |
| Future Time Perspective | -7.12 | 9.43 | -.04 | 1.45 | 10.04 | .01 |
| Temporal Duration | -1.14 | .35 | -.14\*\* | -.78 | .35 | -.10\* |
| Future Anhedonia | 9.88 | 5.11 | .08† | 12.66 | 5.06 | .11\* |
| Extraversion | 3.07 | 7.26 | .02 | 8.19 | 7.17 | .05 |
| Agreeableness | 20.17 | 9.74 | .11\* | 22.82 | 9.55 | .12\* |
| Conscientiousness | 5.96 | 9.86 | .03 | -5.72 | 10.39 | -.03 |
| Emotional Stability | 19.45 | 8.31 | .12\* | 11.02 | 8.41 | .07 |
| Openness | -14.94 | 9.59 | -.08 | -5.44 | 9.68 | -.03 |
| Past Negative |  |  |  | -16.30 | 10.19 | -.08 |
| Past Positive |  |  |  | -40.83 | 14.25 | -.14\*\* |
| Present Fatalism |  |  |  | -.66 | 13.30 | .00 |
| Present Hedonism |  |  |  | -58.05 | 13.57 | -.22\*\*\* |
| Future |  |  |  | 24.26 | 16.37 | .08 |
| *R*2 | .10 | | | .17 | | |
| *F* for change in *R*2 | 3.29\*\* | | | 8.54\*\*\* | | |

*Note*. Age is coded as year of birth in the original dataset. For ease of interpretation, we reversed the sign on the coefficient in the regression tables.

† < .10. \**p* < .05. \*\**p* < .001. *\*\*\*p* < .001.

**Table S3.**

*Summary of Hierarchical Regression Analysis, With Future Starts (N = 524)*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Model 7 | | | Model 8 | | | Model 9 | | | Model 10 | | |
| Variable | *B* | *SE* *B* | *β* | *B* | *SE* *B* | *β* | *B* | *SE* *B* | *β* | *B* | *SE* *B* | *β* |
| Future Starts | -2.49 | 1.03 | -.11\* | -1.88 | 1.05 | -.08† | -1.80 | 1.05 | -.08† | -1.47 | 1.06 | -.06 |
| Education |  |  |  | .89 | 6.51 | .01 | 1.21 | 6.53 | .01 | .42 | 6.44 | .00 |
| Age |  |  |  | 2.03 | .65 | .14\*\* | 2.02 | .65 | .14\*\* | 1.54 | .70 | .10\* |
| Sex |  |  |  | 5.97 | 20.53 | .01 | 5.05 | 20.56 | .01 | 2.01 | 20.30 | .00 |
| Abstract Thinking |  |  |  |  |  |  | -2.58 | 3.04 | -.04 | -4.18 | 3.09 | -.06 |
| Future Self-Continuity |  |  |  |  |  |  |  |  |  | 12.70 | 5.94 | .10\* |
| Future Time Perspective |  |  |  |  |  |  |  |  |  | 1.46 | 8.44 | .01 |
| Temporal Duration |  |  |  |  |  |  |  |  |  | -1.19 | .36 | -.15\*\* |
| Future Anhedonia |  |  |  |  |  |  |  |  |  | 9.46 | 5.08 | .08† |
| *R*2 | 0.01 | | | 0.03 | | | 0.03 | | | 0.07 | | |
| *F* for change in *R*2 | 5.81\* | | | 3.25\* | | | 0.72 | | | 4.92\*\* | | |

**Table S3.** (continued)

*Summary of Hierarchical Regression Analysis, With Future Starts (N = 524)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Model 11 | | | Model 12 | | |
| Variable | *B* | *SE* *B* | *β* | *B* | *SE* *B* | *β* |
| Future Starts | -1.70 | 1.06 | -.07 | -1.58 | 1.03 | -.07 |
| Education | .28 | 6.42 | .00 | -5.07 | 6.37 | -.03 |
| Age | .49 | .74 | .03 | .06 | .74 | .00 |
| Sex | 5.48 | 20.93 | .01 | 7.32 | 20.49 | .02 |
| Abstract Thinking | -4.70 | 3.10 | -.07 | -2.51 | 3.07 | -.04 |
| Future Self-Continuity | 8.81 | 6.00 | .07 | 6.91 | 5.81 | .05 |
| Future Time Perspective | -8.54 | 9.39 | -.05 | 1.03 | 10.01 | .01 |
| Temporal Duration | -1.11 | .36 | -.14\*\* | -.74 | .35 | -.09\* |
| Future Anhedonia | 9.30 | 5.10 | .08† | 12.38 | 5.04 | .11\* |
| Extraversion | 3.45 | 7.28 | .02 | 8.67 | 7.17 | .06 |
| Agreeableness | 19.99 | 9.77 | .11\* | 22.52 | 9.55 | .12\* |
| Conscientiousness | 6.71 | 9.87 | .03 | -5.50 | 10.38 | -.03 |
| Emotional Stability | 20.70 | 8.38 | .13\* | 12.15 | 8.46 | .08 |
| Openness | -14.68 | 9.60 | -.08 | -5.00 | 9.67 | -.03 |
| Past Negative |  |  |  | -16.58 | 10.19 | -.09 |
| Past Positive |  |  |  | -41.97 | 14.25 | -.15\*\* |
| Present Fatalism |  |  |  | .53 | 13.34 | .00 |
| Present Hedonism |  |  |  | -59.33 | 13.53 | -.23\*\*\* |
| Future |  |  |  | 25.25 | 16.36 | .08 |
| *R*2 | .10 | | | .17 | | |
| *F* for change in *R*2 | 3.51\*\* | | | 8.90\*\*\* | | |

† < .10. \**p* < .05. \*\**p* < .001. *\*\*\*p* < .001.

**Table S4.**

*Summary of Hierarchical Regression Analysis, With Forced Choice (N = 524)*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Model 13 | | | Model 14 | | | Model 15 | | | Model 16 | | |
| Variable | *B* | *SE B* | *β* | *B* | *SE B* | *β* | *B* | *SE B* | *β* | *B* | *SE B* | *β* |
| Forced Choice | -6.26 | 3.79 | -.07 | -5.80 | 3.79 | -.07 | -5.59 | 3.80 | -.06 | -3.83 | 3.85 | -.04 |
| Education |  |  |  | 1.37 | 6.50 | .01 | 1.69 | 6.52 | .01 | .90 | 6.43 | .01 |
| Age |  |  |  | 2.21 | .64 | .15\*\* | 2.19 | .64 | .15\*\* | 1.68 | .69 | .11\* |
| Sex |  |  |  | 7.04 | 20.63 | .01 | 6.04 | 20.66 | .01 | 2.33 | 20.42 | .00 |
| Abstract Thinking |  |  |  |  |  |  | -2.74 | 3.04 | -.04 | -4.27 | 3.09 | -.06 |
| Future Self-Continuity |  |  |  |  |  |  |  |  |  | 12.16 | 5.99 | .09\* |
| Future Time Perspective |  |  |  |  |  |  |  |  |  | .88 | 8.43 | .00 |
| Temporal Duration |  |  |  |  |  |  |  |  |  | -1.22 | .36 | -.15\*\* |
| Future Anhedonia |  |  |  |  |  |  |  |  |  | 9.48 | 5.11 | .08† |
| *R2* | 0.01 | | | 0.03 | | | 0.03 | | | 0.07 | | |
| *F* for change in *R*2 | 2.72 | | | 4.00\*\* | | | 0.81 | | | 4.88\*\*\* | | |

**Table S4.** (continued)

*Summary of Hierarchical Regression Analysis, With Forced Choice (N = 524)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Model 18 | | | Model 19 | | |
| Variable | *B* | *SE* *B* | *β* | *B* | *SE* *B* | *β* |
| Forced Choice | -3.68 | 3.82 | -.04 | -2.89 | 3.69 | -.03 |
| Education | .98 | 6.41 | .01 | -4.35 | 6.36 | -.03 |
| Age | .66 | .74 | .04 | .21 | .74 | .01 |
| Sex | 4.40 | 21.01 | .01 | 6.19 | 20.58 | .01 |
| Abstract Thinking | -4.84 | 3.10 | -.07 | -2.72 | 3.07 | -.04 |
| Future Self-Continuity | 8.36 | 6.06 | .06 | 6.63 | 5.87 | .05 |
| Future Time Perspective | -9.08 | 9.39 | -.05 | .24 | 10.01 | .00 |
| Temporal Duration | -1.15 | .36 | -.14\*\* | -.77 | .35 | -.09\* |
| Future Anhedonia | 9.32 | 5.14 | .08† | 12.36 | 5.08 | .11\* |
| Extraversion | 3.12 | 7.29 | .02 | 8.39 | 7.18 | .06 |
| Agreeableness | 20.77 | 9.77 | .11\* | 23.20 | 9.56 | .12\* |
| Conscientiousness | 6.96 | 9.89 | .04 | -5.29 | 10.40 | -.03 |
| Emotional Stability | 19.20 | 8.33 | .12\* | 10.82 | 8.42 | .07 |
| Openness | -14.13 | 9.62 | -.07 | -4.73 | 9.69 | -.02 |
| Past Negative |  |  |  | -16.11 | 10.20 | -.08 |
| Past Positive |  |  |  | -41.43 | 14.27 | -.15\*\* |
| Present Fatalism |  |  |  | -.90 | 13.32 | .00 |
| Present Hedonism |  |  |  | -59.22 | 13.56 | -.23\*\*\* |
| Future |  |  |  | 25.09 | 16.40 | .08 |
| *R*2 | .10 | | | .17 | | |
| *F* for change in *R*2 | 3.36\*\* | | | 8.88\*\*\* | | |

† < .10. \**p* < .05. \*\**p* < .001. *\*\*\*p* < .001.

**Table S5.**

*Summary of Hierarchical Regression Analysis, With Composite Measure (N = 524)*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Model 20 | | | Model 21 | | | Model 22 | | | Model 23 | | |
| Variable | *B* | *SE B* | *β* | *B* | *SE B* | *β* | *B* | *SE B* | *β* | *B* | *SE B* | *β* |
| Composite | -34.75 | 13.03 | -.12\*\* | -30.20 | 13.13 | -.10\* | -29.22 | 13.20 | -.10\* | -25.77 | 13.45 | -.09† |
| Education |  |  |  | .68 | 6.50 | .00 | .98 | 6.51 | .01 | .18 | 6.43 | .00 |
| Age |  |  |  | 2.08 | .64 | .14\*\* | 2.07 | .64 | .14\*\* | 1.62 | .69 | .11\* |
| Sex |  |  |  | 8.24 | 20.55 | .02 | 7.33 | 20.59 | .02 | 4.39 | 20.34 | .01 |
| Abstract Thinking |  |  |  |  |  |  | -2.37 | 3.04 | -.03 | -4.01 | 3.08 | -.06 |
| Future Self-Continuity |  |  |  |  |  |  |  |  |  | 12.14 | 5.94 | .09\* |
| Future Time Perspective |  |  |  |  |  |  |  |  |  | 2.12 | 8.44 | .01 |
| Temporal Duration |  |  |  |  |  |  |  |  |  | -1.16 | .36 | -.14\*\* |
| Future Anhedonia |  |  |  |  |  |  |  |  |  | 10.34 | 5.12 | .09\* |
| *R2* | 0.01 | | | 0.03 | | | 0.03 | | | 0.07 | | |
| *F* for change in *R*2 | 7.12\*\* | | | 3.52\* | | | 0.61 | | | 4.87\*\*\* | | |

**Table S5.** (continued)

*Summary of Hierarchical Regression Analysis, With Composite (N = 524)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Model 24 | | | Model 25 | | |
| Variable | *B* | *SE* *B* | *β* | *B* | *SE* *B* | *β* |
| Composite | -26.11 | 13.38 | -.09† | -20.81 | 12.97 | -.07 |
| Education | .17 | 6.41 | .00 | -5.01 | 6.36 | -.03 |
| Age | .60 | 74 | .04 | .18 | .73 | .01 |
| Sex | 7.42 | 20.98 | .02 | 8.49 | 20.56 | .02 |
| Abstract Thinking | -4.56 | 3.10 | -.07 | -2.48 | 3.07 | -.04 |
| Future Self-Continuity | 8.34 | 6.00 | .06 | 6.61 | 5.82 | .05 |
| Future Time Perspective | -7.82 | 9.39 | -.04 | 1.29 | 10.02 | .01 |
| Temporal Duration | -1.09 | .36 | -.13\*\* | -.74 | .35 | -.09\* |
| Future Anhedonia | 10.10 | 5.13 | .09\* | 12.91 | 5.07 | .11\* |
| Extraversion | 3.46 | 7.27 | .02 | 8.53 | 7.16 | .06 |
| Agreeableness | 19.75 | 9.76 | .10\* | 22.47 | 9.55 | .12\* |
| Conscientiousness | 6.62 | 9.85 | .03 | -5.47 | 10.38 | -.03 |
| Emotional Stability | 20.22 | 8.33 | .13\* | 11.62 | 8.42 | .07 |
| Openness | -14.55 | 9.59 | -.08 | -5.04 | 9.67 | -.03 |
| Past Negative |  |  |  | -16.44 | 10.18 | -.09 |
| Past Positive |  |  |  | -41.60 | 14.24 | -.15\*\* |
| Present Fatalism |  |  |  | .10 | 13.31 | .00 |
| Present Hedonism |  |  |  | -58.39 | 13.54 | -.22\*\*\* |
| Future |  |  |  | 25.17 | 16.36 | .08 |
| *R*2 | .10 | | | .17 | | |
| *F* for change in *R*2 | 3.41\*\* | | | 8.69\*\*\* | | |

† < .10. \**p* < .05. \*\**p* < .001. *\*\*\*p* < .001.

1. We also conducted a replication of this study (with 200 participants from Mechanical Turk, 15 of whom failed an IMC) in which we counterbalanced the order of the dots task and the monetary allocation task. Results showed a similar pattern regardless of order (i.e., there was a negative relationship between when the present ends / when the future starts / the objective measure of when the present ends and monetary allocation), and more formally, order was not a significant factor in the analyses that regressed allocation on perceptions of when the present ends and when the future starts. [↑](#footnote-ref-1)
2. When excluding participants who failed both attention checks, we observe similar results. Namely, we find a main effect of Division Location, with the Long Present Conditions (*M* = .45) being less likely to sign up for the saving gift card (i.e., the Wealthfront gift card) compared to the Short Present Conditions (*M* = .51), B = -.36, Wald 2(1) = 4.41, *p* < .05. There was also a trend-level effect of Division Appearance, with the Blurry Division conditions being less likely to sign up for the Wealthfront gift card (*M* = .46) compared to the Sharp Division conditions (*M* = .51), B = -.29, Wald 2(1) = 3.36, *p* = .07. The interaction between Division Location and Division Appearance, however, did not reach traditional levels of significance, B = .23, Wald 2(1) = .90, *p* = .34. [↑](#footnote-ref-2)