Social Psychological and Personality Science
2016, Vol. 7(3) 213-222

DOI: 10.1177/1948550615623842
spps.sagepub.com

Valuing Time Over Money Is Associated With Greater Happiness

Ashley V. Whillans[1], Aaron C. Weidman[1], and Elizabeth W. Dunn[1]

Abstract

How do the trade-offs that we make about two of our most valuable resources—time and money—shape happiness? While past research has documented the immediate consequences of thinking about time and money, research has not yet examined whether people's general orientations to prioritize time over money are associated with greater happiness. In the current research, we develop the Resource Orientation Measure (ROM) to assess people's stable preferences to prioritize time over money. Next, using data from students, adults recruited from the community, and a representative sample of employed Americans, we show that the ROM is associated with greater well-being. These findings could not be explained by materialism, material striving, current feelings of time or material affluence, or demographic characteristics such as income or marital status. Across six studies ($N = 4{,}690$), we provide the first empirical evidence that prioritizing time over money is a stable preference related to greater subjective well-being.

Keywords

well-being, happiness, time, money, trade-offs, orientations

In a typical day and across a lifetime, people face trade-offs between time and money. These trade-offs may play a role in major decisions such as whether to choose a higher paying career that demands longer hours (vs. making less money and having more free time) and in mundane decisions such as whether to spend a Saturday afternoon cleaning gutters (or paying someone else to do it). Over the years, the decisions that individuals make related to prioritizing time versus money may hold important implications for well-being.

Although time and money are largely interchangeable in the modern economy, a growing body of research suggests that people think about time and money in profoundly different ways (Mogilner, 2010; Zauberman & Lynch, 2005). Whereas thinking about money leads people to value productivity and independence, thinking about time leads people to prioritize social connections (Mogilner, 2010; Vohs, Mead, & Goode, 2006, 2008). For example, after completing a scrambled-words task that implicitly activated the concept of time (vs. money), individuals reported more desire to socialize and less desire to work (Mogilner, 2010). This research provides initial evidence that activating the concepts of time and money can have critical consequences for short-term decisions—with potential long-term consequences for well-being, although this link has not yet been explored. Thus, we sought to assess whether people who chronically prioritize time over money are happier than people who prioritize money over time.

From our perspective, the extent to which people prioritize time over money should be related to—but distinct from—materialism and material striving, which are both associated with lower well-being (Kasser & Ryan, 1993; Richins & Dawson, 1992; Roberts & Clement, 2007). Materialism is defined as the general importance that individuals ascribe to the ownership and acquisition of material goods (Richins & Dawson, 1992), and material striving is defined as having a preoccupation with accumulating wealth (Furnham, 1984). Whereas materialism and material striving measures broadly capture individuals' absolute levels of interest in material things and money, respectively, these materialism measures were not designed to assess how individuals navigate trade-offs between time and money.

Overview

In the present research, we develop the Resource Orientation Measure (ROM) to examine stable individual differences in the proclivity to prioritize time over money (Studies 1, 2a and b, and 3b). Next, we examine whether the ROM is associated with greater happiness (Studies 2b, 3a and b, and 4). To develop and validate this measure and to examine the relationship between prioritizing time over money and well-being, we report data from six studies ($N = 4{,}690$). Detailed demographic characteristics of the participants from each study are presented in Table 1. We follow the reporting standards proposed by Simmons,

[1] University of British Columbia, Vancouver, British Columbia, Canada

Corresponding Author:
Ashley V. Whillans, Department of Psychology, The University of British Columbia, 2136 West Mall, Vancouver, British Columbia, Canada V6T 1Z4.
Email: ashleywhillans@psych.ubc.ca

Table 1. Participant Demographic Characteristics Across Studies.

Study	2a	2b	3a[a]	3b[b]	4
n	260	518	242	2,303	1,265
Percent time oriented	61	69	52	61	46
Percent female	78	59	74	76	48
Md, age		37	21	20	45
Md, HH income	—	CAD$100K–CAD$149K	—	—	US$75K–US$85K
Md (range) number of children[c]	—	0 (0–4)	—	—	1 (0–6+)
Md (range) number work hours/week[d]		40 (0–90)			40 (0–90)
% Married	—	66	—	—	68

Note. HH = household; Md = median.
[a]In Study 3a, participants answered the Resource Orientation Measure (ROM) about the year after graduation. [b]In Study 3b, participants completed the gender-neutral version of the ROM. [c]This variable represents responses to "*How many children are still living with you?*" [d]This variable represents responses to "*How many hours do you work at your main job each week?*"

Nelson, and Simonsohn (2011); we report all exclusions, every measure that was given, and the stopping rule for each study as part of the Supplementary Online Materials (SOM). Our materials and data are available through the Open Science initiative https://osf.io/3zdv7/.

ROM

Across all studies, we assessed whether individuals prioritized having more time or having more money by presenting them with a binary choice. To help participants imagine these trade-offs concretely and to encourage honest responding (Fisher, 1993), we asked participants to read a short paragraph describing two individuals who prioritize money or who prioritize time in their daily lives. The identities of the characters and the pronouns used in the vignettes were matched to the participant's gender (Tina/Tom and Maggie/Michael); for participants who did not report identifying as either male or female, the names and pronouns used in the vignettes were displayed as gender neutral (Madison/Taylor). The choices were presented as follows:

> **Tina** values her **time** more than her money. She is willing to sacrifice her money to have more time. For example, Tina would rather work fewer hours and make less money, than work more hours and make more money.
>
> **Maggie** values her **money** more than her time. She is willing to sacrifice her time to have more money. For example, Maggie would rather work more hours and make more money, than work fewer hours and have more time.

We chose a binary response format for pragmatic and theoretical reasons. Practically, there is an increased awareness about the importance of conducting research with large representative samples (Open Science Collaboration, 2015). Thus, it is necessary to design short measures that minimize participant burden while maximizing reliability (Nagy, 2002). Conceptually, we chose this response format because we were interested in assessing people's broad preferences related to prioritizing time over money as opposed to assessing people's domain-specific preferences.

Study 1

Participants and Procedure

We assessed the test–retest reliability of the ROM across a 3-month time frame, in which relatively stable constructs should show no true change (Chmielewski & Watson, 2009). In this study, 102 students from the University of British Columbia (UBC) in Vancouver, Canada completed the ROM twice approximately 3 months apart. Students participated in exchange for the chance to win one of three prizes valued at CAD$700.

Results

At the 3-month follow-up, most participants reported having the same orientation; the κ coefficient was .63 and the percent agreement was 82%, which indicates substantial consistency (Landis & Koch, 1977).

Discussion

Study 1 provides evidence that the tendency to prioritize time over money is a relatively stable preference. Next, to establish construct validity, we tested whether the ROM was associated with major life decisions (Study 2a) and everyday decisions (Study 2b). Study 2a also included measures of materialism and material striving to examine the discriminant validity of the ROM. Although the primary purpose of Studies 2a and b was to establish construct and discriminant validity, Study 2b also included a brief measure of subjective well-being (SWB).

Study 2a

Participants and Procedure

Two hundred and sixty UBC students participated in exchange for entry into a lottery or for course credit (78% female). First, participants read three scenarios that involved making trade-offs between time and money (see the SOM for the exact scenarios used). For example, in one scenario, participants were asked to imagine that they were renting their first

Table 2. Correlation Table of All the Variables Examined in Study 2a.

Measures	1	2	3	4	5	6	7	8
1. ROM (1 = time oriented)								
2. Number of time choices	.26**							
3. Materialism (15 item)	−.33**	−.11†						
4. Material striving (3 item)	−.33**	−.18**	.66**					
5. Social desirability	.02	−.02	.10	−.02				
6. Conscientiousness	.08	−.10	−.23*	−.26*	—			
7. Time affluence	.11	.04	−.007	−.02	—	—		
8. Material affluence	.09	.07	−.15	−.11	—	—	—	
9. Gender (1 = female)	−.004	.10	−.03	−.001	.09	.08	.05	.17

Note. All participants completed both measures of materialism and material striving, but only completed one measure out of social desirability, conscientiousness, or time/material affluence. Thus, correlations could not be computed between these measures. ROM = Resource Orientation Measure.
†$p \leq .10$, *$p \leq .05$, **$p \leq .01$.

apartment and had to decide between renting a cheaper apartment with a longer commute and renting a more expensive apartment with a shorter commute. In another scenario, participants were told that they had been admitted to two graduate programs and had to decide between a program that resulted in a higher starting salary and more work hours or a program that resulted in a lower starting salary and fewer work hours. After indicating their decisions, participants reported their age and gender and completed the ROM.

We also examined whether the ROM was distinct from related constructs, including materialism and material striving. Thus, all participants completed the 15-item Material Values Scale (MVS; Richins, 2004; $\alpha = .89$) and 3 items from the Obsession subscale of the Money Beliefs & Behavioral Scale (MMBS; Furnham, 1984; Piff, Stancato, Martinez, Kraus, & Keltner, 2012; $\alpha = .81$). Each participant was then randomly assigned to complete one of the following tertiary measures: a short-form measure of socially desirable responding (Strahan & Gerbasi, 1972; $\alpha = .77$; $n = 87$), the conscientiousness subscale of the Big Five Inventory (BFI; John & Srivastava, 1999; $\alpha = .81$; $n = 81$), or 2 items assessing current feelings of time and material affluence (Mogilner, Chance, & Norton, 2012; $n = 90$).

Results and Discussion

To examine whether prioritizing time over money predicted decision making, we summed the number of time-saving decisions that participants made in response to the three scenarios. As predicted, participants who reported prioritizing time on the ROM chose a higher number of time-saving options ($M = 1.73$, $SD = .78$) as compared to participants who reported prioritizing money on the ROM ($M = 1.28$, $SD = .87$), $t(258) = 4.30$, $p < .001$, $d = .55$, 95% confidence interval (CI) [.30, .80]; see SOM for the results reported for each scenario separately.[1]

As expected, there was a moderate negative association between prioritizing time over money and both materialism ($r = -.33$, $p < .001$) and material striving ($r = -.33$, $p < .001$). Critically, these results suggest that although the ROM shows some overlap with materialism and material striving, it captures a largely distinct construct. There were no significant associations between participants' responses to the ROM and social desirability ($r = .02$), conscientiousness ($r = .08$), or current feelings of time and material affluence ($rs \leq .11$), suggesting that these variables did not play a major role in shaping participants' responses to the ROM. See Table 2 for the correlations between all variables.

Study 2b

Participants and Procedure

In Study 2b, 518 adults were recruited from a science museum in Vancouver, Canada (59% female). Participants completed a 2-item measure of SWB. First, participants answered the question, "Taking all things together, how happy would you say you are?" on a scale from 0 = *not at all* to 10 = *extremely* (Jowell, 2007). Next, participants completed the Cantril Ladder (Cantril, 1965). For this question, participants were asked to report where they currently stand in life on a ladder that spanned from the worst possible to the best possible life imaginable (from 0 = *bottom rung* to 10 = *top rung*). We selected these questions because they are brief measures used extensively in large-scale survey research (e.g., Gallup World Poll; Harter & Gurley, 2008; Deaton, 2008).

Participants then completed the ROM and read scenarios that involved making trade-offs between time and money (see SOM). For example, in one scenario, participants were told that they were trying to book flights for an upcoming trip and had to decide between a cheaper flight with a layover or a more expensive direct flight. To increase the generalizability of our results, we used three additional scenarios, in which participants were asked to choose between driving farther to pay less for gas, paying more for coffee at a friendlier café, or paying more to park at a closer parking lot; to minimize burden, each participant saw only two of the scenarios. In this study, we counterbalanced the presentation of the ROM and the scenarios. Some participants first completed the ROM and then the scenarios (ROM 1st; $n = 194$); other participants first completed the scenarios and then the ROM (ROM 2nd; $n = 324$).

Participants were then asked to report on their current feelings of time and material affluence and to provide information about their income, marital status, employment status (whether they

Table 3. Correlation Table of All the Variables Examined in Study 2b.

Measures	1	2	3	4	5	6	7	8	9	10	11
1. ROM (1 = time oriented)											
2. Number of time choices	.14**										
3. SWB	.07	.06									
4. Time affluence[a]	.11*	−.005	.15**								
5. Material affluence[b]	.009	.09†	.26**	.29**							
6. Household income[c]	−.03	.17**	.23**	−.05	.26**						
7. Marital status (1 = married)	−.09*	.04	.07	−.17**	−.04	.35**					
8. Number of children at home	−.08†	.11*	−.12**	−.26**	−.10*	.22**	.43**				
9. Number of hours worked/week	−.10*	.10*	.04	−.27**	−.02	.28**	.07	−.01			
10. Employed (1 = looking)[c]	−.02	−.06	.03	.09†	−.02	−.18**	−.13**	−.08†	−23**		
11. Gender (1 = female)	−.07	−.03	.05	−.01	.11**	.18**	.06	−.05	.24**	−.11*	
12. Age	.03	.09†	.05	.08†	.10*	.18**	.31**	.27**	−.05	−.15**	.05

Note. ROM = Resource Orientation Measure; SWB = subjective well-being.
[a]This variable represents responses to "thinking about right now, how much spare time do you have?" from 5(*very little available time*) to +5(*lots of available time*). [b]This variable represents responses to "thinking about right now, how much spare money do you have? [c]Annual household income was asked on a 19-point scale from "*less than CAD$5,000*" to "*over CAD$1 million*," thus this scale was treated as a continuous measure (Rhemtulla, Brosseau-Liard, & Savalei, 2012). [c]This variable represents responses to "*how would you describe your employment?*" Respondents who replied that they were working part time or were unemployed and looking for work were classified as "*looking*" to represent self-reported underemployment.
†$p \leq .10$, *$p \leq .05$, **$p \leq .01$.

were employed and/or looking for work), the number of children they currently had living at home, the number of hours they worked on average each week, and their age and gender. These demographic variables were chosen for their previously documented relationship with time use and well-being (Mogilner, 2010; Mogilner et al., 2012). Lastly, participants were entered into a lottery for completing the survey and were asked to select their preferred prize. Specifically, participants were asked to choose between receiving a CAD$50 cash prize or a CAD$120 voucher for a time-saving service (housecleaning); these amounts were chosen based on a pilot study ($n = 40$) suggesting that people would be equally satisfied with receiving either prize at these dollar amounts (see also Zauberman & Lynch, 2005).

Results

Scenarios

To examine whether prioritizing time over money predicted decision making, we summed the number of time-saving decisions that people made in response to the two scenarios. As predicted, participants who prioritized time over money made a greater number of decisions that resulted in having more time at the expense of having more money ($M = 1.25$, $SD = .66$) as compared to participants who prioritized money ($M = 1.05$, $SD = .73$), $t(509) = 3.08$, $p = .002$, $d = .29$, 95% CI [.10, .48]; see the SOM for the results reported on each scenario separately. Order did not interact with participants' responses to the ROM to predict time-saving decisions, $p = .506$.

Prize Draw

As expected, participants who prioritized time over money were also more likely to choose the time-saving voucher (26.0%) as compared to participants who prioritized money over time (15.5%), $X^2(1, 515) = 6.90$, $p = .009$. Order did not interact with participants' responses to the ROM to predict time-saving decisions, $p = .206$.

SWB

Our two measures of SWB were significantly correlated, $r(518) = .59$, $p < .001$; thus, we averaged these 2 items to create an index of SWB. Preliminary analyses revealed an unpredicted effect of order, so we included the ROM, survey order, and a ROM × Order interaction in ANOVA to predict SWB. This analysis revealed a significant main effect of the ROM, $F(1, 515) = 4.49$, $p = .035$, $\eta^2 = .009$, that was qualified by a significant ROM × Order interaction, $F(1, 515) = 6.22$, $p = .013$, $\eta^2 = .01$. Decomposing this interaction, among participants who completed the ROM before the scenarios (ROM 1st), prioritizing time over money was associated with greater SWB, $F(1, 511) = 8.40$, $p = .004$, $\eta^2 = .02$. In contrast, among participants who completed the ROM after completing the scenarios (ROM 2nd), prioritizing time over money was not significantly associated with SWB, $p = .757$.

To examine the robustness of these effects, we next repeated this analysis, adding our predetermined set of control variables as covariates (income, age, gender, number of children living at home, the number of hours participants reported working each week, participants' marital and employment status, and participants' current feelings of time and material affluence). With all of these variables included, the main effect of the ROM on SWB became marginally significant, $F(12, 426) = 3.53$, $p = .061$, $\eta^2 = .008$, while the ROM × Order interaction remained significant, $F(12, 426) = 4.11$, $p = .043$, $\eta^2 = .01$. See Table 3 for a correlation table of all variables examined in this study.[2]

Discussion for Studies 2a and b

Studies 2a and b suggest that the ROM is associated with major life decisions such as choosing what apartment to rent (Study 2a), daily decisions such as choosing where to purchase gas (Study 2b), and consequential in the moment decisions such as choosing what lottery prize to receive (Study 2b). Together, these studies demonstrate that people who prioritize time over money express a greater willingness to use money to have more time when making decisions—from the major (Study 2a) to the mundane (Study 2b). Study 2a also shows that the ROM is a related but distinct construct from materialism and material striving, and that responses to the ROM were not driven by conscientiousness, socially desirable responding, time affluence, or material affluence. Study 2b provides tentative evidence that prioritizing time over money may be associated with greater well-being. To further explore the relationship between the ROM and well-being, we examined a more extensive set of SWB measures in two studies conducted with UBC students (Studies 3a and b, $n = 2{,}545$). To broaden the scope of our research beyond convenience samples, we then explored the relationship between the ROM and SWB in a representative sample of employed Americans (Study 4, $n = 1{,}265$).

Study 3a

Participants and Procedure

In Study 3a, 242 UBC students participated in exchange for course credit or candy (74% female). Participants reported their general happiness on a single item measure (Abdel-Khalek, 2006). Participants then reported their SWB on an affective and cognitive measure; positive and negative affect in the last 4 weeks was reported on the Schedule for Positive and Negative Affect (SPANE; Diener et al., 2009; $\alpha = .88$), and overall cognitive evaluation of life was reported on the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larson, & Griffin, 1985; $\alpha = .88$). Participants completed the ROM and several measures tangential to the current hypothesis (see SOM). Participants completed the 15-item Material Values Scale (Richins, 2004; $\alpha = .86$), 3 MMBS items ($\alpha = .73$) and reported their age and gender.

Results and Discussion

As expected, our measures of SWB were significantly correlated, rs $\geq .52$, ps $< .001$ (see Table 4). Thus, to maximize the breadth of our measures and the brevity of our article, and in line with previous research using these measures (e.g., Aknin et al., 2013), we standardized and averaged these items to create a SWB composite. To maximize transparency, we report the results on each measure in Table 4 and the SOM.

Consistent with our hypothesis, participants who prioritized time reported higher SWB compared to participants who prioritized money, $t(240) = 2.34$, $p = .020$, $d = .30$, 95% CI [.05, .55]. Reporting these results in the regression framework, prioritizing time over money was a significant predictor of SWB, $\beta = .15$, $p = .020$; these results remained unchanged upon including materialism and material striving into the model, $\beta = .15$, $p = .028$.[3] See Table 5 for the final regression model including covariates.

To replicate the critical results of Study 3a, we conducted an additional study (Study 3b) with a much larger sample.

Study 3b

Participants and Procedure

By including our key measures in a department-wide online survey at the beginning of the semester, we were able to recruit a very large sample of UBC students, who participated for course credit ($n = 2303$; 76% female). As a result of this data collection strategy, participants also completed demographic items and a number of measures submitted by other labs as part of the same survey, and we were only able to include a limited number of items. Specifically, participants completed the identical SWB items from Study 2a and reported their positive and negative affect in the last four weeks on 6 items from the SPANE. We chose the 3 highest loading positive items and the 3 highest loading negative items from Study 3a (Diener et al., 2009; $\alpha = .86$). Participants then completed the ROM and 3 items from the MVS. We chose the 3 highest loading MVS items from Study 3a (Richins, 2004; $\alpha = .75$). Approximately 2 weeks later, we also recruited a subset of these participants ($n = 640$) to complete the ROM again, allowing us to further assess test–retest reliability over a short period in which no meaningful change should be expected (Chmielewski & Watson, 2009).

Results

As expected, our measures of SWB were significantly correlated, rs$(2{,}297) \geq .53$, $p < .001$; thus, we standardized and averaged these measures to create an index of SWB (see Table 6 for correlations between all variables in this study). Consistent with our hypothesis, participants who reported prioritizing time reported higher SWB as compared to participants who reported prioritizing money, $t(2{,}297) = 2.41$, $p = .016$, $d = .10$, 95% CI [.02, .18]. Reported in the regression framework, prioritizing time over money was a significant predictor of SWB, $\beta = .05$, $p = .016$; these results were largely unchanged upon including materialism in the model, $\beta = .05$, $p = .030$ (see Tables 7 and 8).[4]

Test–retest analyses indicated that the majority of participants reported having the same orientation at the 2-week follow-up; the κ coefficient was .72 and the percent agreement was 88%, which indicates excellent consistency (Landis & Koch, 1977).

Discussion

In Studies 3a and b, we found evidence that prioritizing time over money was associated with greater well-being after controlling for other variables known to affect SWB, including material striving (Study 3a) and materialism

Table 4. Correlation Table of All of the Variables Examined in 3a.

Measures	1	2	3	4	5	6	7	8	9
1. ROM (1 = time oriented)									
2. SWB composite	.15*								
3. Happy (1-item)	.14*	.87**							
4. SWLS (5-item)	.14*	.87**	.64**						
5. SPANE PA	.07	.81**	.65**	.59**					
6. SPANE NA	−.13*	−.73**	−.59**	−.52**	−.57**				
7. Materialism	−.39**	−.07	−.003	−.12†	−.06	.04			
8. Material striving	−.17**	−.19**	−.18**	−.15*	−.19**	.09	.41**		
9. Gender (1 = female)	.001	.06	.05	.10	.03	.02	−.05	−.05	
10. Age	.14*	−.06	−.05	−.01	−.09	.06	−.11†	−.07	−.09

Note. ROM = Resource Orientation Measure; SWB = subjective well-being; SWLS = Satisfaction with Life Scale; SPANE PA = positive affect; SPANE NA = negative affect.
†$p \leq .10$, *$p \leq .05$, **$p \leq .01$.

Table 5. Regression Model Predicting SWB from ROM and Covariates in Study 3a.

Predictor	β	*B*	*SE*	*p* Value for Predictor	*F* Value for Model		*p* Value	R^2
ROM	.15*	.27	.12	.028				
Materialism	.06	.09	.10	.396				
Material striving	−.19**	−.22	.08	.007				
Age	−.08	−.04	.03	.221				
Gender	.05	.09	.13	.461	*F*(5, 241)	3.04	.011	.060

Note. Results are reported for the final stepwise regression with all covariates entered simultaneously into the model. ROM = Resource Orientation Measure.
*$p \leq .05$, **$p \leq .01$.

Table 6. Correlation Table of All of the Variables Examined in Study 3b.

Measures	1	2	3	4	5	6	7
1. ROM (1 = time oriented)							
2. SWB composite	.05*						
3. SWB (2-item measure)	.05*	.90**					
4. SPANE PA	.04*	.90**	.62**				
5. SPANE NA	−.03	−.63**	−.53**	−.61**			
6. Materialism	−.22**	−.03	−.04*	−.004	.06**		
7. Gender (1 = Female)	.02	.03	.02	.02	.04*	.002	
8. Age	.04†	−.01	−.001	−.02	.02	−.10**	−.04†

Note. ROM = Resource Orientation Measure; SWB = subjective well-being; SPANE PA = positive affect; SPANE NA = negative affect.
†$p \leq .10$, *$p \leq .05$, **$p \leq .01$.

Table 7. Regression Predicting SWB From ROM and Covariates in Study 3b.

Predictor	β	*B*	*SE*	*p* Value for Predictor	*F* Value for Model		*p* Value	R^2
ROM	.05*	.17	.08	.030				
Materialism	−.02	−.03	.04	.480	*F*(4, 2297)	3.10	.045	.003

Note. ROM = Resource Orientation Measure; SWB = subjective well-being.
*$p \leq .05$.

(Studies 3a and b). An important limitation of Studies 2b and 3a and b is that these studies were conducted with convenience samples that consisted mostly of students, who may face less consequential trade-offs between time and money as compared to working adults. Consequently, we sought to examine the relationship between prioritizing time over money and SWB in a representative sample of employed adults living in the United States (Study 4).

Table 8. Regression Predicting SWB From ROM and Covariates in Study 3b.

Predictor	β	*B*	*SE*	*p* Value for Predictor	*F* Value for Model		*p* value	R^2
ROM	.05*	.17	.08	.030				
Materialism	−.02	−.03	.04	.444				
Age	−.01	−.008	.01	.570				
Gender	.02	.10	.09	.271	*F*(4, 2294)	1.96	.098	.003

Note. ROM = Resource Orientation Measure; SWB = subjective well-being.
*$p \leq .05$.

Study 4

Participants and Procedure

In Study 4, we recruited our sample through the GfK Knowledge Networks Survey panel. Panel members respond to an average of two online surveys per month and receive small cash rewards and prizes for survey completion (www.gfk.com). GfK uses equal probability sampling to recruit potential panel members by mail and phone and provides participants in noninternet households with free internet access. This allows GfK to recruit a statistically representative sample of the American population. Because we collected these data as part of a larger study examining time-use and well-being, we selectively recruited GfK panel respondents who reported being employed and who were 18 years of age or older at the time of completing the initial GfK demographic profile. Thus, our participants should approximate a representative sample of employed adults over 18 in the United States; although we refer to our participants as a representative sample of Americans, it is worth noting that some participants may not have had U.S. citizenship and that the study did not include younger individuals or unemployed individuals (i.e., individuals who did not report working for pay).

One limitation of conducting this research with a large representative sample of working Americans is that we were limited in the number of measures that we could implement. As a result, in Study 4, we implemented the identical measure of SWB from Study 2b as compared to capturing a broad index of SWB. After participants completed this measure as well as measures tangential to the present hypothesis SOM, participants completed the ROM.

Results and Discussion

Our two measures of SWB were significantly correlated, $r(1,263) = .73$, $p < .001$; thus, we averaged these 2 items to create an index of SWB. See Table 9 for demographic characteristics of participants in this study. See Table 10 for the correlations between all variables. Consistent with our hypothesis, participants who prioritized time over money reported higher SWB as compared to participants who prioritized money, $t(1,263) = 3.19$, $p = .001$, $d = .18$, 95% CI [.07, .29]. Reported in the regression framework, prioritizing time over money was a significant predictor of SWB, $\beta = .09$, $p = .001$.

Based on prior work examining time-use and well-being (Mogilner, 2010), we also conducted these analyses controlling for age, gender, education, income, number of hours worked on average each week, marital status, and number of children living at home; our key results remained significant, $\beta = .06$, $p = .032$ (see Table 11).[5]

Table 9. Descriptive Statistics of All of the Variables Measured in Study 4.

	Percentage or Mean (*SD*)	Range
SWB (2 item)	6.95 (1.67)	0.00 to 10.00
Household income	13.40 (3.80)[a]	1.00 to 19.00
Race (1 = Black)	27.0%	
Marital status (1 = married)	68.3%	
Percentage of children in the home	1.05 (1.18)	0.00 to 6.00+
Percentage of hours worked/week	39.98 (12.70)	0.00 to 90.00
Education (1 = attended university)	41.0%	
Home ownership (1 = yes)	74.4%	
Political orientation[b]	4.04 (1.53)	1.00 to 7.00
Religious attendance[c]	3.21 (1.42)	1.00 to 5.00
Age	44.69 (13.56)	18.00 to 81.00

Note. SWB = subjective well-being.
[a]The income category "13" represents an annual household income of "US$60,000–US$74,999." The income category "14" represents an annual household income of "US$75,000–US$84,999." [b]Participants responded to this question on a scale from 1 = "*extremely liberal*," to 7 = "*extremely conservative*." The mean represents "*moderate, middle of the road*." [c]Participants responded to this question on a scale from 1 = "*attends once a year or less*" 5 = "*attends once per week or more*." The mean represents "once or twice a month."

After controlling for a broad range of demographic characteristics, valuing time over money remained positively associated with SWB in a U.S. sample of working adults.

Studies 2b–4 Meta-Analyzed

Next, we meta-analyzed the results of Studies 2b, 3a and b, and 4($n = 4{,}328$). Following the recommendations of Lipsey and Wilson (2001), individual standardized effect sizes from each study were weighted by the inverse of their variance and then aggregated to arrive at a meta-analytic effect size across studies. In this analysis, prioritizing time over money was associated with greater SWB, $d = .14$, $p < .001$, 95% CI [.08, .20]. We did not have a priori hypotheses about the components of SWB (PA, NA, SWL) that would most strongly correlate with prioritizing time over money. Thus, on an exploratory basis, we examined the associations between each component of SWB and the ROM separately using data from Studies 3a and b—the two data sets in which three measures of SWB were collected simultaneously ($n = 2{,}545$). Overall, the preference to

Table 10. Correlation between All Relevant Variables in Study 4.

Measures	1	2	3	4	5	6	7	8
1. ROM (1 = time oriented)								
2. SWB composite	.09**							
3. Household income	.04	.24**						
4. Marital status (1 = married)	.04	.22**	.30**					
5. # of children at home	.03	.05	.06	.25**				
6. # of hours worked/week	−.17**	.04	.13**	.12**	.07*			
7. Education (1 = university)	.10**	.12**	.34**	.05†	.003	.12**		
8. Gender (1 = female)	.07*	.003	−.04	−.11**	−.01	−.20**	.03	
9. Age	.07*	.19**	.11**	.18**	−.13**	−.04	−.04	−.02

Note. Income was reported on the identical scale from Study 2b. We recoded the education variable; 1 = bachelor's degree or higher; ROM = Resource Orientation Measure; SWB = subjective well-being.
†$p \leq .10$, *$p \leq .05$, **$p \leq .01$.

Table 11. Regression Predicting SWB From Time Orientation and Covariates in Study 4.

Predictor	β	*B*	*SE*	*p* Value for Predictor	*F* Value for Model		*p* Value	R^2
ROM (1 = time oriented)	.06*	.20	.09	.032				
Household income	.16**	.07	.01	.000				
Marital status (1 = married)	.14**	.49	.11	.000				
Number of children at home	.02	.03	.04	.432				
Number of hours worked/week	−.005	−.001	.004	.885				
Level of education	.06*	.21	.10	.033				
Gender (1 = female)	.02	.07	.09	.449				
Age	.15**	.02	.003	.000	*F*(8, 1255)	19.32	< .001	.11

Note. ROM = Resource Orientation Measure; SWB = subjective well-being.
*$p \leq .05$, **$p \leq .01$.

prioritize time over money was significantly associated with greater SWL, $d = .12$, $p < .001$, 95% CI [.04, .20], greater PA, $d = .09$, $p < .001$, 95% CI = [.02, .16] and lower NA, $d = .08$, $p < .001$, 95% CI = [.0003, .16]. The consistency of these findings is supported by research showing that SWB is often best defined as a combination of high positive affect, low negative affect, and high feelings of life satisfaction (Diener, 1994; Diener & Lucas, 1999; Sheldon, 2013). These additional analyses reveal the consistency of our findings across various studies, participants, and measures (Lipsey & Wilson, 2001).

General Discussion

We developed the Resource Orientation Measure to examine people's preferences to prioritize time over money. Across six studies ($N = 4{,}690$), we used the ROM to provide the first evidence that prioritizing time over money is a stable preference associated with day-to-day decisions, major life decisions, and SWB. In particular, people who prioritized time over money reported experiencing greater happiness. This association was small but robust, and held controlling for materialism, material striving, current feelings of time and material affluence, and relevant demographic characteristics such as income, employment, marital status, gender, and age.

It is important to note that the relationship between the ROM and SWB was small (Cohen, 1992). The magnitude of this effect is consistent with a great deal of existing research, which typically reveals rather diminutive relationships between individual psychological variables and the broad and multiply-determined construct of SWB (e.g., Lyubomirsky, Sheldon, & Schkade, 2005). However, it is notable that in a representative sample of employed adults living in the United States (Study 4), the association between our single-item measure of time–money trade-offs and SWB was nearly half the size of other well-established demographic factors such as marital status (Helliwell & Putnman, 2004) and income (Stevenson & Wolfers, 2013). Critically, we found reliable associations between prioritizing time over money and SWB among a sample of students, community members in Canada, and a representative sample of employed Americans.

How and why might prioritizing time over money shape happiness? Across these studies, we found evidence that the ROM was associated with beneficial time-use decisions. Indeed, students who prioritized time over money on the ROM reported a preference for career paths that would give them more free time (Study 2a) and adults who prioritized time over money on the ROM reported working fewer hours on average each week (Studies 2b and 4). In turn, these decisions might allow people to spend more time engaging in enjoyable activities such as socializing and exercising (e.g., Kahneman, Krueger, Schkade, Schwarz, & Stone, 2006). These orientations also seem to influence people's decisions about spending

money. For example, people who prioritized time over money were willing to pay more money to live closer to work (rather than spending their time commuting).

That said, the goal of the current work was to validate the ROM and assess its relationship with well-being, rather than to delineate the complex causal processes that might underlie this relationship. It is certainly plausible that happier people may be better able to derive happiness from free time and therefore might be more likely to prioritize time over money (Fredrickson, 2001). Thus, additional longitudinal research is needed to understand the causal processes by which the tendency to prioritize time over money shapes well-being and vice versa. To this end, our team is currently conducting a multiyear follow-up study with 4,000 students to explore how responses on the ROM shape decision making and happiness over time. Additional research should also explore whether the happiness benefits of prioritizing time over money emerge primarily after one's financial needs are met (Kahneman & Deaton, 2010). Although we did not find evidence for a moderating effect of income in this research (Study 4), more work is needed to examine whether prioritizing time versus money has the greatest benefits for people at the higher end of the income spectrum.

Building on these initial findings, additional research should examine whether time versus money orientations fluctuate over the course of one's lifetime. In Study 4, older people were more likely to prioritize time over money, compared to younger people. These findings are consistent with research showing that age changes people's priorities (Carstensen, Isaacowitz, & Charles, 1999). It would also be interesting to explore whether time–money preferences shift in response to major life changes, such as after having children, following a traumatic life event, or after retirement. Because psychological flexibility substantively contributes to well-being (Kashdan & Rottenberg, 2010), these studies would allow for the examination of the novel hypothesis that flexibly changing one's time versus money orientations to match the needs of the current situation might result in the greatest psychological rewards.

In sum, these findings provide initial evidence that people's general tendencies to prioritize time over money are associated with greater happiness. These findings underscore the importance of considering the trade-offs that people make between time and money, beyond examining the acute effects of thinking about time and money in the lab. Although causality cannot be inferred, these data point to the possibility that valuing time over money is a stable preference that may provide one path to greater happiness.

Acknowledgments

We would like to thank Dr. Andrew Baron for allowing our research team to conduct components of this research at the Science World Living Lab. We would also like to thank Marisa Gagne for her outstanding assistance with data collection and management.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Time Sharing Experiments for the Social Sciences (TESS-0626).

Notes

1. The critical results were substantively unchanged controlling for materialism and material striving, $F(1, 257) = 12.78$, $p < .001$.
2. This analysis is based on $n = 426$; due to incomplete responses on all measures.
3. There was no interaction between the resource orientation measure (ROM) and materialism to predict subjective well-being (SWB), $\beta = -.04$, $p = .728$; or between the ROM and material striving to predict SWB, $\beta = -.04$, $p = .678$.
4. The ROM did not interact with materialism to predict SWB, $\beta = .02$, $p = .488$.
5. There was no interaction between the ROM and income to predict SWB, $\beta = .01$, $p = .704$.

Supplemental Material

The online data supplements are available at http://spp.sagepub.com/supplemental.

References

Abdel-Khalek, A. M. (2006). Measuring happiness with a single-item scale. *Social Behavior and Personality: An International Journal*, *34*, 139–150.

Aknin, L. B., Barrington-Leigh, C. P., Dunn, E. W., Helliwell, J. F., Burns, J., Biswas-Diener, R., . . . NortonM. I. (2013). Prosocial spending and well-being: Cross-cultural evidence for a psychological universal. *Journal of Personality and Social Psychology*, *104*, 635.

Cantril, H. (1965). *Pattern of human concerns*. New Brunswick, NJ: Rutgers University Press.

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, *54*, 165.

Chmielewski, M., & Watson, D. (2009). What is being assessed and why it matters: The impact of transient error on trait research. *Journal of Personality and Social Psychology*, *97*, 186.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155.

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research*, *31*, 103–157.

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*, 71–75.

Diener, E., & Lucas, R. E. (1999). 11 personality and subjective well-being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: Foundations of hedonic psychology* (pp. 213–229). New York, NY: Russell Sage.

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2009). New measures of well-being: Flourishing and positive and negative feelings. *Social Indicators Research*, *39*, 247–266.

Deaton. (2008). Income, health, and well-being around the world: Evidence from the Gallup World Poll. *Journal of Economic Perspectives*, *22*, 53–72.

Fisher, R. J. (1993). Social desirability bias and the validity of indirect questioning. *Journal of Consumer Research*, *20*, 303–315.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*, 218.

Furnham, A. (1984). Many sides of the coin: The psychology of money usage. *Personality and Individual Differences*, *5*, 501–509.

Harter, J. K., & Gurley, V. F. (2008). Measuring well-being in the United States. *Association for Psychological Science Observer*, *21*, 23–26.

Helliwell, J. F., & Putnam, R. D. (2004). The social context of well-being. *Philosophical Transactions-royal Society of London Series B Biological Sciences*, *359*, 1435–1446.

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of Personality: Theory and Research*, *2*, 102–138.

Jowell, R. (2007). *European Social Survey 2006/2007. Round 3: Technical Report*. Citiy University, Centre for Comparative Social Surveys, London.

Kahneman, D., & Deaton, A. (2010). High income improves evaluation of life but not emotional well-being. *Proceedings of the National Academy of Sciences*, *107*, 16489–16493.

Kahneman, D., Krueger, A. B., Schkade, D., Schwarz, N., & Stone, A. A. (2006). Would you be happier if you were richer? A focusing illusion. *Science*, *312*, 1908–1910.

Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review*, *30*, 865–878.

Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, *65*, 410.

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, *33*, 159–174.

Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis* (*Vol. 49*). Thousand Oaks, CA: Sage.

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, *9*, 111.

Mogilner, C. (2010). The pursuit of happiness time, money, and social connection. *Psychological Science*, *21*, 1348–1354.

Mogilner, C., Chance, Z., & Norton, M. I. (2012). Giving time gives you time. *Psychological Science*, *23*, 1233–1238.

Nagy, M. S. (2002). Using a single-item approach to measure facet job satisfaction. *Journal of Occupational and Organizational Psychology*, *75*, 77–86.

Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, *349*, aac4716.

Piff, P. K., Stancato, D. M., Martinez, A. G., Kraus, M. W., & Keltner, D. (2012). Class, chaos, and the construction of community. *Journal of Personality and Social Psychology*, *103*, 949.

Rhemtulla, M., Brosseau-Liard, P. E., & Savalei, V. (2012). When can categorical variables be treated as continuous? A comparison of robust continuous and categorical SEM estimation methods under suboptimal conditions. *Psychological Methods*, *17*, 354.

Richins, M. L. (2004). The material values scale: Measurement properties and development of a short form. *Journal of Consumer Research*, *31*, 209–219.

Richins, M. L., & Dawson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research*, *19*, 303–316.

Roberts, J. A., & Clement, A. (2007). Materialism and satisfaction with over-all quality of life and eight life domains. *Social Indicators Research*, *82*, 79–92.

Sheldon, K. M. (2013). Individual daimon, universal needs, and subjective well-being: Happiness as the natural consequence of a life well lived. In A. S. Waterman (Ed.), *The best within us: Positive psychologyperspectives on eudaimonia* (pp. 119–138). Washington, DC: APA.

Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science*, *22*, 1359–1366. doi:10.1177/0956797611417632

Stevenson, B., & Wolfers, J. (2013). *Subjective well-being and income: Is there any evidence of satiation?* (No. w18992). Washington, DC: National Bureau of Economic Research.

Strahan, R., & Gerbasi, K. C. (1972). Short, homogeneous versions of the Marlowe-Crowne Social Desirability Scale. *Journal of Clinical Psychology*, *28*, 191–193.

Vohs, K. D., Mead, N. L., & Goode, M. R. (2006). The psychological consequences of money. *Science*, *314*, 1154–1156.

Vohs, K. D., Mead, N. L., & Goode, M. R. (2008). Merely activating the concept of money changes personal and interpersonal behavior. *Current Directions in Psychological Science*, *17*, 208–212.

Zauberman, G., & Lynch, J. G., Jr. (2005). Resource slack and propensity to discount delayed investments of time versus money. *Journal of Experimental Psychology: General*, *134*, 23.

Author Biographies

Ashley V. Whillans is a PhD student and a Public Scholar at the University of British Columbia. Her work examines the causes and consequences of helping others, with a focus on how time and money impact prosocial behavior, well-being, and health.

Aaron C. Weidman is a PhD student at the University of British Columbia. He studies the function and measurement of emotion and related constructs, including happiness and well-being.

Elizabeth W. Dunn, PhD, is a professor of psychology at the University of British Columbia. Her work focuses on happiness and self-knowledge.