

# Buying Time Promotes Relationship Satisfaction

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## Buying Time Promotes Relationship Satisfaction

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**Abstract**

Six studies ( $N = 2,285$ ) highlight the role played by time-saving purchases—such as housecleaning and meal delivery services—in promoting relationship satisfaction. Study 1a provides initial survey evidence that time-saving purchases protect relationship satisfaction from the negative impact of stress. Study 1b provides a conceptual replication in a six-week longitudinal study, demonstrating that members of couples are less negatively impacted by stress on days when they make time-saving purchases. Next, we assess the role of time-saving purchases in changing how couples spend their time as a key mechanism driving the stress-buffering benefits of these purchases. For couples who do not make time-saving purchases, higher levels of stress are associated with spending less quality time together which in turn undermines relationship satisfaction. In contrast, couples who make time-saving purchases spend more quality time together—even under high levels of stress—thereby facilitating greater relationship satisfaction (Studies 2a and 2b). We offer further support for this mechanism by using experimental methodology to document that using money to buy quality time spent jointly is a necessary condition for time-saving purchases to benefit relationship satisfaction (Studies 3a and 3b). Together, these studies suggest a solution to the inevitable stress faced by couples: spend money to buy quality time, together.

**Key Words:** Time; Money; Couples; Stress-buffering; Relationship Satisfaction

### **Buying Time Promotes Relationship Satisfaction**

Every couple has received the vague and often unsolicited advice—typically from older relatives—to “make time for one another.” Left unsaid is more specific advice about *how* exactly couples are supposed to find this free time (since time cannot be made, only found). We offer a solution: by using money to buy themselves out of disliked, time-consuming tasks, couples can buy themselves into quality time together. Moreover, we propose that buying time should be particularly useful in helping couples make time for one another when they are experiencing especially high levels of stress—when it is often most needed.

Certainly, couples who spend more quality time together are more satisfied with their relationships and experience more intimacy (Kingston & Nock, 1987; Kirchier, 1988; Milek, Butler, & Bodenmann, 2015; Orthner, 1975). However, work and family demands place significant constraints on the amount of time that couples are able spend together (Biachi, Robinson, & Milkie, 2006; Claxton & Perry-Jenkins, 2008). As a result, couples in the United States and around the world feel more pressed for time than in past generations (Hamermesh & Lee, 2007; Perlow, 1999) and are spending less time together, with one study estimating a decline of 26% between 1975 and 2000 (Bianchi et al., 2006). At the same time, new technologies have arisen to offer solutions to the time pressures of modern life. For example, the rise of the gig economy has made outsourcing tasks accessible and affordable for most. In one survey conducted in 2015 by the Pew Research Center, seven-in-ten Americans had used some type of online or shared economy service (GaoLeave, 2015). Moreover, research indicates that even relatively low-cost time-saving purchases—like having groceries delivered—can have beneficial effects for personal well-being (Whillans, Dunn, Smeets, Bekkers, & Norton, 2017).

Might this intervention that is reliably linked to improved life satisfaction be repurposed to improve relationship satisfaction as well? We propose that making time-saving purchases is one way that couples can spend more quality time together, helping them to cope with relationship stress. This investigation offers a theoretical contribution to the literatures on both relationship satisfaction and the psychology of time and well-being by providing a novel exploration of when, why, and how time-saving purchases translate into greater well-being.

First, whereas previous research has found a link between making time-saving purchases and individual well-being, we examine the critical role played by the manner in which this found time is spent in producing these well-being benefits: in the domain of relationships, making time-saving purchases that a) are made jointly, saving time for both members of the couple and b) increase quality time spent together produce the greatest benefits. Second, whereas past research shows that buying time improves individual well-being by reducing general stress about time, we show that buying time with one's partner also reduces the negative impact of relationship-relevant stress—such as arguments about finances and work-life balance—improving relationship satisfaction. Finally, we demonstrate heterogeneity in the benefits of buying time, identifying a novel moderator of the link between buying time and well-being. Specifically, we show that couples under high stress are those that benefit most from buying quality time.

### **Stress and Relationship Satisfaction**

Stress—the psychological reaction to real and imagined demands (Lazarus & Folkman, 1984)—originates from both within and outside of romantic relationships and plays a key role in relationship satisfaction (Bodenmann, 1995; Karney & Bradbury, 1995; Randall & Bodenmann, 2009). Researchers have documented the role of various commonly-experienced stressors in predicting relationship outcomes, including conflict within the relationship (Falconier, Nussbeck,

Bodenmann, Schneider, & Bradbury, 2015; Gordon & Chen, 2016), financial stress (Falconier & Epstein, 2010; Gamarel, Reisner, Laureneau, Nemoto, & Operario, 2014), and difficulty maintaining work-life balance (Van Steenbergen, Kluwer, & Karney, 2014).

Not surprisingly, the experience of stress is detrimental for relationship satisfaction (see Randall & Bodenmann, 2009; 2017 for reviews). In cross-sectional surveys, people who experienced higher levels of relationship stress—including financial problems, high workloads, and interpersonal conflict—were less satisfied with their intimate relationships (Falconier & Epstein, 2010; Falconier et al., 2015; Gamarel et al., 2014). Diary studies indicate that on days of higher work stress (Bolger, DeLongis, Kessler, & Wethington, 1989; Buck & Neff, 2012), higher relationship conflict (Gordon & Chen, 2016), or higher levels of overall stress (including financial, work, and other stressors; Totenhagen, Curran, Serido, & Butler, 2013), people report significant declines in same-day relationship satisfaction. In longitudinal research, people who report experiencing a greater number of stressful life events show significant declines in relationship satisfaction up to four years later (Karney, Story, & Bradbury, 2005; Neff & Karney, 2004). There is also causal evidence for the link between stress and marital satisfaction. In one experiment, couples were asked to complete an interpersonal interaction before and after undergoing a stress-induction task. After completing the stressful task, the quality of couples' interpersonal interactions declined by 40% (Bodenmann & Shantinath, 2004). This research demonstrates the pervasive, detrimental consequences of stress for relationship satisfaction.

### **Stress-Resiliency and Quality Time**

Despite the consistently observed and negative effect of stress on relationship satisfaction, stress does not impact all couples equally—research suggests that some couples are more resilient (Gordon & Chen, 2016; Hilpert et al., 2016). In light of this observation, there is

growing interest in understanding factors that allow couples to remain satisfied with their relationships even when experiencing stress. Prior research has focused primarily on how couples can adaptively interact *within* their relationship, such as by engaging in constructive communication or forgiving one another (Christensen & Heavey, 1990; Cutrona & Suhr, 1992; Gordon & Chen, 2015; Heavey, Layne, & Christensen, 1993; Hilpert et al., 2016; O'Brien et al., 2009; Overall, Fletcher, Simpson & Sibley, 2009). Moving beyond examining adaptive ways of directly interacting with one's relationship partner, we propose that couples can also make themselves resilient to stress by seeking support from *outside* the relationship.

Specifically, we propose that resilient couples may effectively use their financial resources to seek “support” from the market economy by making time-saving purchases. This line of reasoning is consistent with recent research showing that couples who are willing to seek support from *outside* their romantic relationships are more satisfied than couples who only seek support from *within* their relationships. Indeed, there are situations—such as when couples are experiencing high levels of stress—where it pays off to expect and to receive less support from one's romantic partner (Finkel, Hui, Carswell, & Larson, 2014; Finkel, Larson, Carswell, & Hui, 2014; Gleason et al., 2008; McNulty, 2016). Based on this research, we hypothesize that couples should benefit from spending financial resources to save themselves time, regardless of whether the stress originates from outside (e.g., work life conflict) or within the relationship (e.g., general relationship conflict), and that these effects may be especially pronounced when couples are stressed.

In short, we suggest that, despite their very different surface features, time-saving purchases should be conceptualized as another form of social support—one that can be purchased through the market economy. Conceptualizing time-saving purchases as a market-



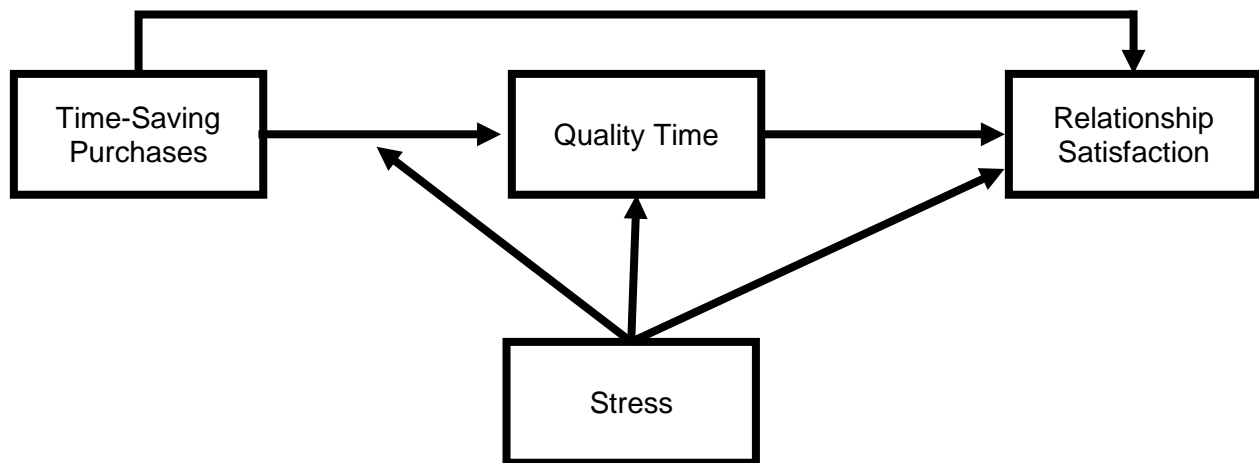
based form of social support allows us to draw on Stress-Buffering Theory, which suggests that social support protects people from the negative consequences of stress (Cohen & Wills, 1985). For individuals with supportive networks, the typical links between stress and lower well-being are attenuated (e.g., DeLongis, Folkman, & Lazarus, 1988; Collins & Feeney, 2000; Pow et al., 2017; Rueger et al., 2016; Taylor, 2011). For example, receiving support from family and friends is especially protective for individuals experiencing high levels of relationship conflict (Walen & Lachman, 2000). Moreover, some evidence suggests that the negative association between individual stress and well-being is lower for individuals who make time-saving purchases (Dunn, Whillans, Aknin & Norton, 2020). Building on this research, we examine whether time-saving purchases can buffer stress in romantic relationships, such that couples who make time-saving purchases are protected from the detrimental effect of stress on relationship satisfaction.

How might time-saving purchases protect relationship satisfaction against stress? We theorize that at least some of the stress-buffering effect of time-saving purchases accrue by helping couples who are experiencing high levels of stress spend more quality time together. As discussed above, spending quality time together is linked to relationship benefits (Kremer-Sadlik & Paugh, 2007; Kingston & Nock, 1987; Kirchner, 1988; Milek, Butler, & Bodenmann, 2015; Orthner, 1975). Additionally, couples who report spending “quality time” together report higher relationship satisfaction, even after controlling for the fact that couples who spend more time together typically are happier (Hickman-Evans, Higgins, Aller, Chavez, & Piercy, 2018; Johnson, Zabriskie, & Hill, 2006; Kingston & Nock, 1987; Kremer-Sadlik & Paugh, 2007).

However, stress can make it difficult for couples to find quality time to spend together. For example, some research has documented links between higher levels of work stress and lower quality time spent with one another, as well as the negative effect of work and family

demands in limiting couples' quality time together (Bianchi, Robinson, & Milkie, 2006; Claxton & Perry-Jenkins, 2008; Hatch & Bulcroft, 2004). Moreover, recent theorizing suggests the central importance of one key adverse effect of relationship stress: decreasing the amount of quality time partners spend together (Randall & Bodenmann, 2017). In sum, time-saving purchases may be stress-buffering for relationship satisfaction because they are effective at helping couples spend quality time together, particularly when they are experiencing high levels of stress. Figure 1 shows our conceptual model linking time-saving purchases to relationship satisfaction via reduced relationship stress and increased quality time spent together.

Figure 1. Conceptual model of the stress-buffering effects of time-saving purchases on relationship satisfaction.



### Overview

Six studies of cohabitating working adults in committed relationships examine whether couples—especially those experiencing high levels of stress—can buy themselves into more quality time with their partner by making time-saving purchases, thereby promoting relationship

satisfaction. Study 1a explores whether time-saving purchases generally protect relationship satisfaction from the detrimental effects of stress. Study 1b is a six-week longitudinal study assessing whether relationship satisfaction is protected from stress specifically on days when people make time-saving purchases. Studies 2a and 2b use samples of individuals and couples to examine whether quality time spent together explains the stress-buffering benefits of time-saving purchases. Finally, Studies 3a and 3b use a well-validated recollection paradigm to provide causal evidence for the association between buying time and relationship satisfaction, showing that time-saving purchases lead to improvements in relationship satisfaction *only* when these purchases lead to more quality time spent together with the partner.

In this manuscript, we follow the reporting standards proposed by Simmons, Nelson, & Simonsohn (2011): we report all exclusions, every central measure, and the stopping rule for each study. We report all of the studies that we conducted on our research questions. Our data and syntax for all studies is available through OSF (<https://osf.io/zcavu/>). See Table 1, for the demographic characteristics of respondents across all studies.

In sum, we test four hypotheses across five correlational and experimental studies:

**Hypothesis 1 (H1):** Making time-saving purchases will be associated with higher levels of relationship satisfaction (Studies 1a-3b).

**Hypothesis 2 (H2):** Time-saving purchases will protect relationship satisfaction from the negative impact of stress (Studies 1a-2b).

**Hypothesis 3 (H3):** Time-saving purchases will predict greater relationship satisfaction by enabling couples to spend more quality time together (Studies 2a-3b).

**Hypothesis 4: (H4):** Time-saving purchases will protect relationship satisfaction from the negative impact of stress by increasing quality time spent together. For couples who

do not make time-saving purchases, higher levels of stress will be associated with less quality time spent together, which in turn, will be associated with lower relationship satisfaction. For couples who make time-saving purchases, stress will not be associated with quality time spent with the partner or relationship satisfaction (Studies 2a, 2b).

### **Study 1a**

#### **Overview**

Study 1a examines whether time-saving purchases are linked to greater relationship satisfaction by protecting couples from the negative impact of stress. We also test whether these results hold controlling for demographic variables that could explain these results: age, gender, number of kids living at home, household income, and whether respondents report spending any money together with their partner on material and experiential purchases each month (see also: DeVoe & Pfeffer, 2007; DeVoe & Pfeffer, 2010; Hershfield, Barnea, & Mogilner, 2016).

#### **Participants and Procedure**

In Study 1a, we recruited respondents from Amazon's Mechanical Turk, who completed our survey in exchange for \$0.80 USD. Respondents were eligible to complete the study if they were employed full-time outside the home (more than 30 hours per week), married or in a marriage-like relationship, and if they lived together with their partner (who was also employed outside the home at least 30 hours per week). To encourage honest reporting of demographic characteristics, we told respondents that there were no right or wrong answers and that they might view different survey items depending on how they answered the eligibility survey. All ineligible respondents completed another, unrelated study. We targeted 400 respondents ( $n = 200$  males and  $n = 200$  females) and slightly over-recruited, resulting in a final sample of  $n = 423$ . See Table 1 for demographic information for the sample.

Table 1  
*Demographic Characteristics Across Studies*

	<i>Study</i>					
	<i>1a</i>	<i>1b</i>	<i>2a</i>	<i>2b</i>	<i>3a</i>	<i>3b</i>
<i>N</i>	424 <sup>1</sup>	71 <sup>1</sup> (1872 <sup>3</sup> )	597 <sup>1</sup>	193 <sup>2</sup>	600 <sup>1</sup>	401 <sup>1</sup>
% female	51.0%	91.9%	54.5%	--	53.9%	49.9%
Md, age	25-34	25-34	35-44	35-44	25-34	25-34
Md, family annual income	\$60K-\$74K	\$70-\$79K	\$75K-\$99K	\$75-\$99K	\$50K-\$59K	\$100K-\$149K
Md (range) # of children	0 (0-6+)	0 (0-4)	1 (0-6+)	1 (0-6+)	0 (0-6+)	0 (0-6+)
Md # of work hours/wk	40+ hours	40+ hours	40+ hours	40+ hours	40+ hours	40+ hours
Md # of work hours/wk (partner)	NA	NA	NA	40+ hours	NA	NA

*Note.* "NA" = "not applicable" meaning the measure was not collected in the study of interest.

<sup>1</sup> Number of individuals. <sup>2</sup> Number of dyads. <sup>3</sup> Number of days.

Respondents first completed several measures of relationship satisfaction. To provide a broad index of how much relationship-relevant stress that respondents were experiencing across multiple domains of life, respondents were asked to report how much overall relationship conflict they were experiencing with their partners, how much conflict they were experiencing with their partner about finances, and how much conflict they were experiencing with their partners between work and family life. Respondents then reported whether they spent any money on time-saving, material, and/or experiential purchases in a typical month. Respondents also completed demographic questions (e.g., gender, household income, age, average number of hours worked per week, number of children living at home). On an exploratory basis, respondents also completed several questions about the specific details of the time-saving purchases that they made (e.g., how much time these purchases saved). To promote readability, we report the results for these exploratory measures in the Supplemental Material (SI).

## Measures

**Time-saving purchases.** To assess whether people spent money on time-saving purchases, across all survey studies except where otherwise noted (i.e., Study 1b), we implemented a measure from previously published research (Whillans et al. 2017) that was modified to refer to purchases in the context of romantic relationships. Across all studies, respondents were asked to complete the following question, “In a typical month, do you and your partner spend any money on time-saving purchases? Specifically, do you and your partner spend any money with the primary intention of acquiring free time: a purchase that allows you and your partner to have more time? For example, do you and your partner spend money to take a taxi instead of the bus, to purchase household services (e.g., lawn-mowing, laundry, or housecleaning services), to use online services (online accounting software and research services), or to

purchase more expensive groceries from a closer grocery store?” We focused our analyses on whether respondents reported spending any money to buy time (vs. amount spent). Consistent with past research (Whillans et al., 2017), amount spent did not reliably predict relationship satisfaction, and there were no reliable interactions between time-saving purchases and income to predict quality time spent with the partner or relationship satisfaction; results reported in the SI.

**Relationship satisfaction.** Participants completed a four-item measure of relationship satisfaction, reporting their overall relationship satisfaction on a scale from  $1 = \textit{Extremely Dissatisfied}$  to  $7 = \textit{Extremely Satisfied}$  (e.g., “How satisfied are you with your marriage or marriage-like relationship?”;  $\alpha = 0.92$ ; Chumm et al., 1983).<sup>1</sup>

**Relationship-relevant stress.** Consistent with previous research, which operationalizes stress as the experience of conflict in personally-relevant domains that are both external and internal to the relationship (Falconier & Epstein, 2010; Gamarel et al., 2014; Gordon & Chen, 2016; Randall & Bodenmann, 2009; 2017; Van Steenbergen et al., 2014), we assessed overall relationship conflict, financial conflict within the relationship, and work-life conflict. First, respondents completed a four-item measure assessing their overall relationship conflict. Respondents reported the extent to which they agreed with items such as “How often do you and your partner quarrel?” on a scale from  $1 = \textit{Never}$  to  $6 = \textit{All the time}$  ( $\alpha = 0.92$ ; Spanier, 1976).

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<sup>1</sup>In Studies 1a and 2a, respondents also completed measures of relationship commitment (Rusbult et al., 1998), partner relationship commitment (Gable & Poore, 2008), and partner appreciation (Gable & Poore, 2009). To maintain consistency across studies, the analyses presented for these studies in-text focus on the four-item relationship satisfaction measure. However, to supplement our main analyses, we also used a composite relationship satisfaction outcome that included the four relationship satisfaction items as well as all relationship commitment, partner commitment, and partner appreciation items. Results were substantively similar (see SI for full models).

Next, respondents completed a six-item measure assessing how often they fought with their partner about finances. Respondents reported the extent to which they agreed with items such as “How often do you have financial disagreements with your partner?” on a scale from  $1 = \textit{Never}$  to  $6 = \textit{All the time}$  ( $\alpha = 0.89$ ; Busby et al., 1995). Lastly, respondents completed an eight-item measure assessing conflict between work and family life. Respondents then reported the extent to which they agreed with items such as “The demands of my work interfere with my home and family life” on a scale from  $1 = \textit{Strongly Disagree}$  to  $7 = \textit{Strongly Agree}$  ( $\alpha = 0.93$ ; Netermeyer, Boles, & McMurrin, 1996). All of these assessments of stress were significantly positively correlated (See Table SI.1a.1). As a data-reduction strategy, because relationship-relevant stress was our key focus, we created a composite of overall relationship stress by standardizing and averaging across relationship conflict, financial conflict, and work-life conflict items ( $\alpha = 0.92$ ).

**Discretionary income & demographics.** The decision to spend money on time-saving purchases might reflect, in part, respondents’ level of discretionary income. Thus, to isolate the unique benefits of time-saving purchases, we assessed respondents’ spending on material and experiential purchases as a measure of nondurable spending (Headey, Muffels, & Wooden, 2004; Van Boven & Gilovich, 2003). We also controlled for the identical covariates from related research as follows: respondents’ age, gender, number of children living at home, total annual household income, number of hours respondents typically worked at their main job each week (Mogilner, Chance, & Norton, 2012; Dunn, Whillans, Aknin & Norton, 2020).

**Other measures.** Because we collected these data as part of a larger study examining time-use, chores, and relationship satisfaction, participants completed several measures that were tangential to the present hypothesis (see OSF for all measures: <https://osf.io/zcavu/>).

## Results



**Time-saving purchases.** In Study 1a, 26% of respondents reported spending money on time-saving purchases together with their partner in a typical month (for means, standard deviations, ranges, internal consistencies, and intercorrelations of all study variables, see Tables SI.1a.1 and SI.1a.2 in the SI).<sup>2</sup>

**Relationship satisfaction.** Respondents who spent money on time-saving purchases with their partner in a typical month reported higher overall relationship satisfaction ( $M = 5.96$ ,  $SD = 0.94$ ) compared to respondents who did not spend money on time-saving purchases ( $M = 5.70$ ,  $SD = 1.23$ ),  $t(253.64) = 2.23$ ,  $p = 0.027$ , 95%CI [0.03, 0.48],  $d = 0.23$ . Regression analyses of relationship satisfaction on time-saving purchases are reported in Table 2. Time-saving purchases were a significant predictor of overall relationship satisfaction, Model 1:  $\beta = 0.10$ ,  $B = 0.25(0.13)$ ,  $t(421) = 1.98$ ,  $p = 0.049$ , 95%CI [0.002, 0.50]. These results were consistent when controlling for age, gender, number of children living at home, fulltime employment, annual household income, and whether couples made experiential or material purchases each month, Model 2:  $\beta = 0.10$ ,  $B = 0.27(0.13)$ ,  $t(407) = 2.10$ ,  $p = 0.037$ , 95%CI [0.02, 0.52].

**Stress-buffering role of time-saving purchases.** Next, we examined whether time-saving purchases protected couples from the negative impact of stress on relationship satisfaction. To test this hypothesis, we conducted a series of regression models. In each model, we entered time-saving purchase (1 = *yes*), a grand mean centered stress measure (a composite of the overall, financial, and work-life items), and a time-saving X stress interaction into a regression model to predict relationship satisfaction. As indicated in Table 2, there was a

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<sup>2</sup> All participants provided complete data for all study variables except income, for which 416 provided data. Analyses include all 423 participants except when income was included in analyses, when we included only the 416 participants with complete data.

significant interaction between time-saving purchases and stress to predict relationship satisfaction, Model 3:  $\beta = 0.11$ ,  $B = 0.38(0.17)$ ,  $t(419) = 2.23$ ,  $p = 0.026$ , 95%CI [0.05, 0.71].

This interaction remained significant controlling for material and experiential purchases, age, gender, number of children, hours worked per week, and household income, Model 4:  $\beta = 0.12$ ,  $B = 0.40(0.17)$ ,  $t(405) = 2.30$ ,  $p = 0.022$ , 95%CI [0.25, 0.64].

Decomposing this interaction, for respondents who spent money on time-saving purchases with their partner in a typical month ( $N = 112$ ), there was a negative association between stress and relationship conflict,  $\beta = -0.44$ ,  $B = -0.63(0.12)$ ,  $t(111) = -5.13$ ,  $p < 0.001$ , 95%CI [-0.87, -0.39]. For respondents who did not spend any money on time-saving purchases with their partner in a typical month ( $n = 311$ ), there was a stronger negative association between higher stress and lower relationship satisfaction,  $\beta = -0.52$ ,  $B = -1.01(0.10)$ ,  $t(310) = -10.65$ ,  $p < 0.001$ , 95%CI [-1.20, -0.83]. These analyses provide evidence that time-saving purchases protected couples from the negative impact of stress on relationship satisfaction.

Table 2  
 Regression Analyses of Relationship Satisfaction as a Function of Time-saving Purchases, Stress, and the Interactive Effect of Time-saving Purchases and Stress (Study 1a)

Predictors	Model 1				Model 2				Model 3				Model 4			
	<i>B</i> (SE)	<i>t</i>	<i>p</i>	$\beta$	<i>B</i> (SE)	<i>t</i>	<i>p</i>	$\beta$	<i>B</i> (SE)	<i>t</i>	<i>p</i>	$\beta$	<i>B</i> (SE)	<i>t</i>	<i>p</i>	$\beta$
Intercept	5.70 (0.07)	86.58	<.001		5.00 (0.29)	17.38	<.001		5.68 (0.06)	99.51	<.001		5.60 (0.26)	21.20	<.001	
Time-saving	0.25 (0.13)	1.98	.049	0.10	0.27 (0.13)	2.10	.037	0.10	0.33 (0.11)	2.96	.003	0.13	0.33 (0.11)	2.93	.004	0.13
Stress									-1.01 (0.09)	-11.17	<.001	-0.55	-0.94 (0.10)	-9.92	<.001	-0.51
Time-saving X stress									0.38 (0.17)	2.23	.026	0.11	0.40 (0.17)	2.30	.022	0.12
Material					0.60 (0.15)	3.93	<.001	0.21					0.42 (0.14)	3.01	.003	0.15
Experiential					0.20 (0.13)	1.49	.137	0.08					0.06 (0.12)	0.53	.598	0.03
Age					-0.09 (0.06)	-1.61	.108						-0.11 (0.05)	-2.13	.033	-0.10
Gender					-0.31 (0.11)	-2.78	.006	-0.13					-0.21 (0.10)	-2.09	.037	-0.09
Work hours/week					-0.01 (0.12)	-0.05	.964	-0.00					0.03 (0.11)	0.28	.778	0.01
Children					-0.00 (0.05)	-0.06	.949	-0.00					0.01 (0.04)	0.32	.747	0.01
HH income					0.04 (0.02)	1.87	.062	0.10					0.01 (0.02)	0.27	.788	0.01
<b>Model statistics</b>	<i>F</i> (df)	<i>p</i>	<i>R</i> <sup>2</sup>		<i>F</i> (df)	<i>p</i>	<i>R</i> <sup>2</sup>		<i>F</i> (df)	<i>p</i>	<i>R</i> <sup>2</sup>		<i>F</i> (df)	<i>p</i>	<i>R</i> <sup>2</sup>	
	3.90 (1, 421)	.049	.01		6.21 (8, 407)	<.001	.11		49.62 (3, 419)	<.001	.26		17.10 (10, 405)	<.001	.30	

*Note.* Time-saving = time-saving purchase (1), no time-saving purchase (0); Material = material purchase (1), no material purchase (0); Experiential = experiential purchase (1), no experiential purchases (0); Gender = female (1), male (0); Work hours/week = 31-40 hours (0), 40+ hours (1); Children = number of children living in the home; HH income = household income.

We also probed this interaction to examine whether the benefits of time-saving purchases became stronger at higher levels of stress. Consistent with this proposition, at high levels of stress (1SD above the mean), time-saving purchases were significantly associated with higher relationship satisfaction,  $\beta = 0.22$ ,  $B = 0.57(0.15)$ ,  $t(419) = 3.81$ ,  $p < 0.001$ , 95%CI [0.28, 0.87]. Meanwhile, at mean levels of stress, there was a weaker, positive association between time-saving purchases and relationship satisfaction,  $\beta = 0.13$ ,  $B = 0.33(0.11)$ ,  $t(419) = 2.96$ ,  $p = 0.003$ , 95%CI [0.11, 0.55]. Lastly, at low levels of stress (1SD below the mean), time-saving purchases were not significantly associated with relationship satisfaction,  $\beta = 0.03$ ,  $B = 0.09(0.16)$ ,  $t(419) = 0.53$ ,  $p = 0.596$ , 95%CI [-0.28, 0.34]. These results provide further evidence that time-saving purchases were most beneficial when couples were faced with relatively high levels of stress.

### **Study 1a Discussion**

In Study 1a, we examined the associations between time-saving purchases, stress, and relationship satisfaction. Consistent with H1, respondents who spent money on time-saving purchases reported greater overall relationship satisfaction. We also assessed whether time-saving purchases promoted relationship satisfaction by protecting people from the negative impact of stress (H2) and found initial supportive evidence. For respondents who did not make time-saving purchases with their partner in a typical month, there was a strong, negative association between stress and relationship satisfaction. For respondents who reported making time-saving purchases with their partner in a typical month, this association was attenuated. People who experienced higher levels of stress also benefitted most from time-saving purchases.

One limitation of Study 1a is that our key variables were assessed at a single time point. Previous research suggests that the associations between stress and relationship satisfaction shift

over time (Gadassi et al., 2016; Stone, et al., 2000; Neff & Karney, 2004), such that daily shifts in time-saving purchases could help to explain meaningful variability in relationship processes.

To explore this possibility, Study 1b was a longitudinal study conducted over the course of six weeks, allowing us to examine the course of change in stress and relationship satisfaction in response to time-saving purchases. To conceptually replicate and extend the results of Study 1a, we examined whether people experienced greater relationship satisfaction on days when they made time-saving purchases together with their partner. We also examined whether people experienced greater increases in relationship satisfaction on days when they made time-saving purchases if they were experiencing higher (vs. lower) levels of stress. Examining within-person associations also minimizes the possibility that stable individual differences such as socioeconomic status or contextual variables such as the number of people living at home could account for the results of Study 1a (Ptacek, Smith, Espe, & Raffety, 1994; Stone et al., 2000).

### **Study 1b**

#### **Overview**

Study 1b investigates the role of time-saving purchases in promoting relationship satisfaction in a six-week longitudinal study. In this study, we sought to conceptually replicate Study 1a by examining whether people report greater relationship satisfaction on days where they make time-saving purchases (H1). We also examine whether the positive associations between daily time-saving purchases and relationship satisfaction are stronger under conditions of stress (H2). Consistent with Study 1a, we test our hypotheses controlling for several potentially confounding variables such as age, gender, marital status, number of children, material and experiential purchase behavior, and income. Because it is possible that the stress people experience on days they are making time-saving purchases might differ from the stress

people experience on days they are not making time-saving purchases, we also assess and statistically control for two variables that are generally related to the experience of stress: perceived stress controllability and perceived stress seriousness (Lazarus & Folkman, 1985).

### **Participants and Procedure**

We analyzed data from a larger study examining the stress and relationship satisfaction of 74 respondents (see OSF for the full measures included in this study; <https://osf.io/zcavu/>). We recruited respondents using Facebook advertisements. Respondents were eligible to complete the study if they worked more than 30 hours per week outside the home, were married or in a marriage-like relationship, lived with their partner, and reported making at least two time-saving purchases in a typical month—these eligibility criteria ensured that most participants would make at least one time-saving purchase over the course of our study.

Everyone who completed an initial eligibility survey was entered into a draw for a \$100 Amazon gift card. Eligible respondents completed daily and weekly surveys over the six-week study. Each evening, respondents completed a short online survey in which they reported their relationship satisfaction, daily experience of stress, and purchase behavior. At 7pm each day, respondents received a text message with a link to the daily surveys and were asked to complete the survey “at the end of the day.” Respondents received one entry into a prize lottery for a \$100 Amazon gift card for each daily survey they completed.

Of the 74 respondents who enrolled in the study, three did not provide any daily diary data and were not included in our analyses. Thus, our final analyses include 71 participants.<sup>3</sup>

### **Measures**

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<sup>3</sup> Given our hypotheses of interest, the current analyses focus on all assessments taken within the daily surveys (for weekly measures, see the OSF: <https://osf.io/zcavu/>).

**Daily relationship satisfaction.** We measured day-level relationship satisfaction using a single item adapted from the Dyadic Adjustment Scale (Spanier, 1976): “How satisfied are you with your romantic relationship right now?” (1 = *Not at all* to 6 = *Extremely*). This measure is frequently used as part of longitudinal designs because it successfully captures both individual differences and fluctuations in relationship satisfaction (Gadassi et al., 2016).

**Daily stress.** Study 1a and Studies 2a and 2b included an assessment of relationship-relevant stress (e.g., relationship or financial conflict). In Study 1b, given the longitudinal nature of data collection, we focused on using a short, face-valid assessment of overall stress, by measuring general self-reported day-level stress using a single-item measure (Folkman & Lazarus, 1985; Folkman et al., 1986). Specifically, respondents reported their perceived stress by responding to the item, “How stressed are you right now?” on a scale from 1 = *Not at all* to 6 = *Extremely*. Respondents also completed two validated items assessing the day’s perceived stress controllability and seriousness (described in detail below; Folkman & Lazarus, 1985).

**Time-saving purchase.** After completing the relationship satisfaction and stress items, respondents answered whether they had made a time-saving purchase as follows: “Did you and your partner make any time-saving purchases today (an item or service that allowed you and your partner to have more free time, e.g., taking a taxi instead of the bus)?” (1 = *yes*).

**Control variables.** Consistent with Study 1a, we controlled for respondents’ age, gender, number of children at home, total annual household income, and the number of hours respondents typically worked at their main job each week. We also asked respondents to report how serious and controllable their stress was each day by responding to the following questions: “How serious was the stress you experienced today?” on a scale from 1 = *Not at all* to 6 = *Extremely* and “How controllable was the stress you experienced today?” on a scale from 1 = *Not*

*at all* to 6 = *Extremely*. Once again, consistent with Study 1a, we controlled for whether respondents made material or experiential purchases by asking them the following questions: “Did you and your partner make any material purchases today (tangible object(s) that you and your partner obtain to keep in your possession, e.g., clothing)?” (1 = *yes*); “Did you and your partner make any experiential purchases today (a purchase that you and your partner bought with the primary intention of buying a life experience, e.g., concert tickets)?” (1 = *yes*). The order of these questions was randomized across days for each participant.

### **Analytic Approach**

Each respondent contributed multiple timepoints, leading to dependency in our data. We began our analyses by testing a series of unconditional means multilevel models with timepoints nested within individuals for all repeatedly assessed variables (i.e., time-saving purchases, stress, stress seriousness, stress controllability, material purchases, experiential purchases). This allowed us to examine whether the intercept variance for relationship satisfaction was significantly different from zero and allowed us to calculate intra-class correlations (ICCs) for all repeatedly assessed variables (Woltman, Feldstain, MacKay, & Rocchi, 2012). Results from our null models indicated that a multilevel approach was appropriate. Therefore, to examine the associations between time-saving purchases and relationship satisfaction, we conducted multilevel regression models using Hierarchical Linear Modeling 6.0 (HLM; Raudenbush, Bryk, Cheong, & Congdon, 2004). In these models, daily reports (Level 1) were nested within individuals (Level 2) to predict same-day relationship satisfaction. We separated the within- and between- person effects for all repeatedly assessed predictor variables by: 1) centering all repeatedly-assessed variables on the mean for each person (i.e., group-mean centering) and entering these variables into the model at Level 1 and 2)



computing aggregated averages of each repeatedly variable, centering the aggregated averages on the grand mean, and entering them into the model at Level 2. All variables that were assessed once (i.e., age, gender, number of children at home, total annual household income, and the number of hours respondents typically worked at their main job each week) were centered on the grand mean for all participants and entered into the model at Level 2.

In our first model, we included the within- and between- person effects of time-saving purchases. Following this, we added in the within- and between- person effects of perceived stress as well as the interactive effects of within- and between- person time-saving purchases and within- and between-person stress. However, the interactive effects of 1) within-person shifts in time-saving purchases and within-person shifts in stress, 2) between-person differences in time-saving purchases and within-person shifts in stress, and 3) between-person differences in time-saving purchases and between-person differences in stress were not significant. Finally, we added our covariates to the model, including perceived stress controllability, perceived stress seriousness, material purchases, experiential purchases, age, gender (0 = *male*, 1 = *female*), number of hours worked each week, number of children, and household income.<sup>4</sup>

## Results

**Time-saving purchases and relationship satisfaction.** Our main analyses focused on the association between time-saving purchases and relationship satisfaction (Table 3). Consistent with H1, in Model 1, we found a significant within-person effect of time-saving purchases on relationship satisfaction: on days people made time-saving purchases, they reported significantly higher relationship satisfaction than typical for them,  $B = 0.14(0.05)$ ,  $t(70) = 2.68$ ,  $p = 0.010$ .

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<sup>4</sup> To simplify our models, we only included the significant interactive effect of within-person shifts in time-saving purchases and between-person differences in stress in our model presented in-text. See our SI for full results of a model including all interactive effects.

**Stress-buffering role of time-saving purchases.** Next, we tested whether people were happier in their relationships on days where they made time-saving purchases because these purchases protected relationship satisfaction against the negative effects of stress (H2). Consistent with this possibility, in Model 2, we found an interactive effect between within-person time-saving purchases and between-person stress,  $B = 0.10(0.04)$ ,  $t(69) = 2.51$ ,  $p = 0.015$ . When we included our covariates in the model, this interactive effect was unchanged (Model 3 in Table 3). To understand the nature of this interaction, we reran Model 2 first including the stress variable centered at one standard deviation below the mean and then by including the stress variable centered at one standard deviation above the mean (Aiken & West, 1991).

For individuals who reported low levels of stress (1SD below the mean), time-saving purchases were not significantly associated with within-person shifts in relationship satisfaction,  $B = 0.02(0.05)$ ,  $t(69) = 0.33$ ,  $p = 0.746$ . However, for individuals who reported average levels of stress, time-saving purchases were significantly associated with within-person increases in relationship satisfaction,  $B = 0.12(0.05)$ ,  $t(69) = 2.68$ ,  $p = 0.010$ . Furthermore, for individuals who reported experiencing higher levels of stress (1SD above the mean), time-saving purchases were more strongly associated with within-person increases in relationship satisfaction,  $B = 0.23(0.07)$ ,  $t(69) = 3.31$ ,  $p = 0.002$ . Thus, consistent with H2, and conceptually replicating Study 1a, time-saving purchases were more beneficial for people experiencing higher levels of stress.

Table 3  
 Multilevel Regression Analyses of Within- and Between-Person Associations of Daily Time-saving Purchases, Stress, and Relationship Satisfaction (Study 1b)

Fixed effects	Null Model			Model 1			Model 2			Model 3		
	B (SE)	t	p	B (SE)	t	p	B (SE)	t	p	B (SE)	t	p
Intercept	4.73 (0.11)	43.04	<.001	4.73 (0.11)	43.10	<.001	4.73 (0.10)	45.66	<.001	4.76 (0.09)	53.48	<.001
Time-saving (w)				0.14 (0.05)	2.68	.010	0.12 (0.05)	2.68	.010	0.11 (0.04)	2.46	.017
Time-saving (b)				-0.55 (0.70)	-0.79	.435	-0.57 (0.68)	-0.85	.401	0.13 (0.72)	0.19	.854
Stress (w)							-0.22 (0.03)	-7.27	<.001	-0.19 (0.04)	-5.25	<.001
Stress (b)							-0.30 (0.11)	-2.89	.006	-0.70 (0.23)	-2.99	.005
Time-saving (w) X stress (b)							0.10 (0.04)	2.51	.015	0.08 (0.03)	2.38	.021
Controllability (w)										0.04 (0.02)	1.84	.070
Controllability (b)										0.15 (0.08)	1.85	.070
Seriousness (w)										-0.06 (0.03)	-1.95	.055
Seriousness (b)										0.048 (0.23)	2.03	.047
Material (w)										0.04 (0.05)	0.92	.362
Material (b)										0.12 (0.64)	-0.19	.854
Experiential (w)										0.01 (0.06)	0.14	.890
Experiential (b)										0.92 (1.02)	0.90	.371
Age (b)										-0.31 (0.10)	-3.16	.003
Gender (b)										-0.55 (0.25)	-2.23	.030
Work hours/week (b)										0.12 (0.20)	0.61	.546
Children (b)										0.01 (0.08)	0.17	.869
HH income (b)										0.01 (0.04)	0.15	.885
<b>Random effects</b>	<b>Variance</b>	<b>χ<sup>2</sup></b>	<b>p</b>	<b>Variance</b>	<b>χ<sup>2</sup></b>	<b>p</b>	<b>Variance</b>	<b>χ<sup>2</sup></b>	<b>p</b>	<b>Variance</b>	<b>χ<sup>2</sup></b>	<b>p</b>
Intercept	0.84	2635.11	<.001	0.85	2410.96	<.001	0.76	2482.05	<.001	0.59	999.79	<.001
Time-saving				0.02	63.60	.351	0.01	54.25	>.500	0.02	37.09	>.500
Stress							0.04	208.82	<.001	0.04	70.77	.003
Controllability										0.01	64.49	.011
Seriousness										0.01	39.61	>.500
Material										0.04	54.87	.072
Experiential										0.04	36.92	>.500
Level 1 residual	0.57			0.57			0.48			0.46		

Note. Within-person predictors were group-mean centered and are for the same timepoint as the outcome, relationship satisfaction. Between-person predictors are grand-mean centered. Df for t-values ranged from 54-70; df for χ<sup>2</sup> ranged from 30-70. w = within-person; b = between-person.

### **Study 1b Discussion**

In Study 1b, respondents in committed cohabitating relationships demonstrated increases in relationship satisfaction on days when they made time-saving purchases. Consistent with Study 1a, the within-person association between time-saving purchases and relationship satisfaction was significantly stronger for those who reported higher levels of overall stress during the study. We did not observe significant interactions between 1) each person's average number of time-saving purchases made during the study and each person's average stress levels, 2) each person's average number of time-saving purchases made during the study and daily fluctuations in stress, or 3) daily fluctuations in time-saving purchases and daily fluctuations in stress. Thus, the results from this study do not suggest that time-saving purchases protect relationship satisfaction on days of particularly high stress above people's own typical levels. Instead, the results from both Study 1a&b suggest that time-saving purchases are most impactful for people experiencing consistently high stress.

By assessing within-person links between daily time-saving purchases, stress, and relationship satisfaction, Study 1b provides a nuanced understanding of the associations among these constructs over time. Studies 1a&b examined whether time-saving purchases promoted relationship satisfaction by protecting couples from the negative effects of stress. Studies 2a&b replicate these results, but also extend them by assessing the mechanisms by which time-saving purchases buffer against the negative effects of time-saving purchases on relationship satisfaction. Specifically, we examined whether individuals in relationships (Study 2a) and couples (Study 2b) who make time-saving purchases are protected from stress because they spend more quality time together with their partners.

### **Study 2a**

## Overview

Study 2a first aims to replicate Studies 1a&b by examining a) whether individuals in relationships who report making time-saving purchases in a typical month tend to report higher levels of relationship satisfaction compared to those who do not (H1), and b) whether the link between time-saving purchases and relationship satisfaction is significantly stronger for those experiencing higher vs. lower levels of stress (H2). In addition, Study 2a assesses whether time-saving purchases are associated with higher levels of relationship satisfaction in part because these purchases are associated with increased quality time spent with one's partner (H3). Finally, Study 2a explores whether the association between time-saving purchases and quality time spent with the partner is stronger for those experiencing higher (vs lower) levels of stress (H4).

## Participants and Procedure

In Study 2a, we targeted 600 respondents ( $n = 300$  males and  $n = 300$  females) through the survey company Qualtrics, and successfully recruited a total of 597 eligible respondents. Respondents were eligible to participate if they were employed and worked more than 30 hours per week outside the home, were married or in a marriage-like relationship, and were living together with their partner (who was also employed more than 30 hours outside the home).

Respondents completed the identical four items assessing relationship satisfaction ( $\alpha = 0.97$ ) and the identical 18 items assessing relationship stress ( $\alpha = 0.92$ ) from Study 1a. They also completed the same items assessing time-saving, material, and experiential purchases, the same exploratory follow-up items about time-saving purchases, and the same demographics from Study 1a. To extend Studies 1a&b, respondents also completed a single face-valid item from previous research (Stevens, Kiger & Riley, 2001) assessing quality time with the partner: "In a typical week, how much quality time do you and your partner spend together?" (1 = *Very*

*little/None to 7 = A great deal*). We used this item based on prior research showing that it is not the level or the amount of time that couples spend together that meaningfully contributes to relationship satisfaction—but rather the perceived subjective quality of the time (Johnson, Zabriskie, & Hill, 2006; Kremer-Sadlik & Paugh, 2007). Means, standard deviations, ranges, and correlations among study variables are presented in Tables SI.2a.1 and SI.2a.2 in our SI.

## Results

**Time-saving purchases.** In this study, 42% of respondents spent money on time-saving purchases together with their partner in a typical month.

**Relationship satisfaction.** Again, consistent with H1, respondents who spent money on time-saving purchases together with their partner in a typical month reported higher overall relationship satisfaction ( $M = 5.98$ ,  $SD = 1.23$ ) compared to respondents who did not spend money on time-saving purchases with their partner in a typical month ( $M = 5.60$ ,  $SD = 1.41$ ),  $t(575.72) = 3.49$ ,  $p < 0.001$ , 95%CI [0.17, 0.59],  $d = 0.30$ . Regression analyses of relationship satisfaction on time-saving purchases are reported in Table 4. Time-saving purchases were a significant predictor of relationship satisfaction, Model 1:  $\beta = 0.14$ ,  $B = 0.38(0.11)$ ,  $t(593) = 3.42$ ,  $p = 0.001$ , 95%CI [0.16, 0.60]. Once again, these results were statistically consistent when controlling for age, gender, number of children living at home, fulltime employment, annual household income, and whether couples made experiential or material purchases each month, Model 2:  $\beta = 0.10$ ,  $B = 0.26(0.12)$ ,  $t(573) = 2.10$ ,  $p = 0.036$ , 95%CI [0.02, 0.50].

**Stress-buffering role of time-saving purchases.** As indicated in Table 4, consistent with H2, there was a significant interaction between time-saving purchases and stress to predict relationship satisfaction, Model 3:  $\beta = 0.27$ ,  $B = 0.83(0.18)$ ,  $t(588) = 4.72$ ,  $p < 0.001$ , 95%CI [0.48, 1.18]. This interaction was significant controlling for material and experiential purchases,

age, gender, number of children, hours worked per week, and household income, Model 4:  $\beta = 0.28$ ,  $B = 0.85(0.18)$ ,  $t(568) = 4.85$ ,  $p < 0.001$ , 95%CI [0.50, 1.20].

Decomposing this interaction, among respondents who reported spending money on time-saving purchases with their partner in a typical month ( $N = 248$ ), there was no significant association between stress and relationship conflict,  $\beta = -0.05$ ,  $B = -0.09(0.12)$ ,  $t(247) = -0.75$ ,  $p = 0.452$ , 95%CI [-0.33, 0.15]. However, for respondents who did not spend any money on time-saving purchases with their partner in a typical month ( $n = 339$ ), there was a significant negative association between higher levels of stress and lower relationship satisfaction,  $\beta = -0.37$ ,  $B = -0.92(0.13)$ ,  $t(338) = -7.33$ ,  $p < 0.001$ , 95%CI [-1.17, -0.67]. These analyses provide evidence that time-saving purchases protected couples from the negative impact of stress.

Table 4  
*Regression Analyses of Relationship Satisfaction as a Function of Time-saving Purchases, Stress, and the Interactive Effect of Time-Saving Purchases and Stress (Study 2a)*

Predictors	Model 1				Model 2				Model 3				Model 4			
	<i>B (SE)</i>	<i>t</i>	<i>p</i>	$\beta$	<i>B (SE)</i>	<i>t</i>	<i>p</i>	$\beta$	<i>B (SE)</i>	<i>t</i>	<i>p</i>	$\beta$	<i>B (SE)</i>	<i>t</i>	<i>p</i>	$\beta$
Intercept	5.60 (0.07)	77.71	<.001		6.00 (0.37)	16.19	<.001		5.43 (0.07)	74.45	<.001		6.14 (0.35)	17.47	<.001	
Time-saving	0.38 (0.11)	3.42	.001	0.14	0.26 (0.12)	2.10	.036	0.10	0.56 (0.11)	4.94	<.001	0.21	0.47 (0.12)	3.83	<.001	0.18
Stress									-0.92 (0.12)	-7.50	<.001	-0.44	-1.02 (0.12)	-8.25	<.001	-0.50
Time-saving X stress									0.83 (0.18)	4.72	<.001	0.27	0.85 (0.18)	4.85	<.001	0.28
Material					-0.01 (0.16)	-0.07	.941	-0.00					-0.07 (0.16)	-0.42	.675	-0.02
Experiential					0.06 (0.13)	0.43	.671	0.02					0.03 (0.13)	0.25	.805	0.01
Age					-0.08 (0.05)	-1.41	.158	-0.06					-0.14 (0.05)	-2.74	.006	-0.12
Gender					-0.28 (0.12)	-2.38	.018	-0.10					-0.28 (0.11)	-2.49	.013	-0.10
Work hours/week					-0.15 (0.12)	-1.26	.209	-0.05					-0.15 (0.11)	-1.37	.171	-0.05
Children					-0.05 (0.05)	-0.05	.268	-0.05					-0.04 (0.04)	-0.89	.375	-0.04
HH income					0.01 (0.02)	0.02	.606	0.02					0.01 (0.02)	0.24	.814	0.01
<b>Model statistics</b>	<i>F(df)</i>	<i>p</i>	<i>R</i> <sup>2</sup>		<i>F(df)</i>	<i>p</i>	<i>R</i> <sup>2</sup>		<i>F(df)</i>	<i>p</i>	<i>R</i> <sup>2</sup>		<i>F(df)</i>	<i>p</i>	<i>R</i> <sup>2</sup>	
	11.70 (1, 593)	.001	.02		2.86 (8, 573)	.004	.04		22.71 (3,588)	<.001	.10		9.40 (10,568)	<.001	.14	

*Note.* Time-saving = time-saving purchase (1), no time-saving purchase (0); Material = material purchase (1), no material purchase (0); Experiential = experiential purchase (1), no experiential purchases (0); Gender = female (1), male (0); Work hours/week = 31-40 hours (0), 40+ hours (1); Children = number of children living in the home; HH income = household income.



We also probed this interaction to examine whether the benefits of time-saving purchases were more pronounced at higher levels of stress. Consistent with this proposition, at high levels of stress (1SD above the mean), time-saving purchases were significantly associated with higher relationship satisfaction,  $\beta = 0.40$ ,  $B = 1.09(0.16)$ ,  $t(585) = 7.06$ ,  $p < 0.001$ , 95%CI [0.79, 1.39]. At mean levels of stress, there was a weaker positive association between time-saving purchases and relationship satisfaction,  $\beta = 0.21$ ,  $B = 0.56(0.11)$ ,  $t(585) = 4.94$ ,  $p < 0.001$ , 95%CI [0.34, 0.78]. At low levels of stress (1SD below the mean), time-saving purchases were not significantly associated with relationship satisfaction,  $\beta = 0.01$ ,  $B = 0.03(0.17)$ ,  $t(585) = 0.19$ ,  $p = 0.848$ , 95%CI [-0.29, 0.36]. These results suggest that time-saving purchases were most beneficial when couples faced high levels of stress. Thus, consistent with Studies 1a&b (and H1 and H2), time-saving purchases protected couples from the negative impact of stress.

**Mediating role of quality time.** Next, we specified a moderated mediation path model to examine whether quality time spent with the partner mediated the link between time-saving purchases and relationship satisfaction (H3). In this model, we also examined whether relationship stress moderated the link between time-saving purchases and quality time with the partner (H4). This model was run using the *lavaan* package in R (v. 3.3.3; R Core Team, 2017; Rosseel, 2012). Relationship satisfaction was the distal outcome and quality time spent with the partner was the mediator. Time-saving purchases and relationship stress were specified as predictors of quality time and relationship satisfaction. In predicting quality time, we included an interactive effect between time-saving purchases and stress. We also initially included interactive effects between 1) time-saving purchases and relationship stress, 2) quality time and relationship stress, and 3) time-saving purchases and quality time in predicting relationship satisfaction. However, the only interactive effects that were significantly different from zero were 1) the

interactive effect of time-saving purchases and relationship stress in predicting quality time and 2) the interactive effect of time-saving purchases and relationship stress in predicting relationship satisfaction. Therefore, we dropped the interactive effects between quality time and relationship stress and time-saving purchases and quality time.

All predictors were allowed to correlate, and the model was fully saturated. The model was estimated using maximum likelihood and missing data were handled using full information maximum likelihood. See Figure 2, Panels A for a representation of the final model. We estimated conditional indirect effects of time-saving purchases on relationship satisfaction through quality time as low, mean, and high stress using the Monte Carlo Method for Assessing Mediation (MCMAM; MacKinnon, Lockwood, & Williams, 2004; Selig & Preacher, 2008).

As shown in Figure 2, Panel A, we found a significant interactive effect between time-saving purchases and relationship stress in predicting quality time spent together with the partner,  $\beta = 0.29$ ,  $B = 1.00(0.20)$ ,  $z = 4.91$ ,  $p < .001$ , 95% CI [0.60, 1.39]. Upon decomposing this interaction, results revealed that for respondents experiencing lower stress (1SD below the mean), there was no significant association between making time-saving purchases and quality time spent with the partner,  $\beta = -0.00$ ,  $B = -0.01(0.19)$ ,  $z = -0.04$ ,  $p = .965$ , 95% CI [-0.38, 0.36]. For respondents experiencing average stress, there was a significant positive association between time-saving purchases and higher quality time spent with the partner,  $\beta = 0.20$ ,  $B = 0.63(0.13)$ ,  $z = 4.81$ ,  $p < .001$ , 95% CI [-0.38, 0.88]. For respondents experiencing higher stress (1SD above the mean), the positive association between time-saving purchases and quality time was stronger,  $\beta = 0.41$ ,  $B = 1.27(0.18)$ ,  $z = 7.11$ ,  $p < .001$ , 95% CI [0.92, 1.62]. In turn, more quality time with the

partner was associated with higher relationship satisfaction,  $\beta = 0.37$ ,  $B = 0.32(0.03)$ ,  $z = 9.78$ ,  $p < .001$ , 95% CI [0.26, 0.39].

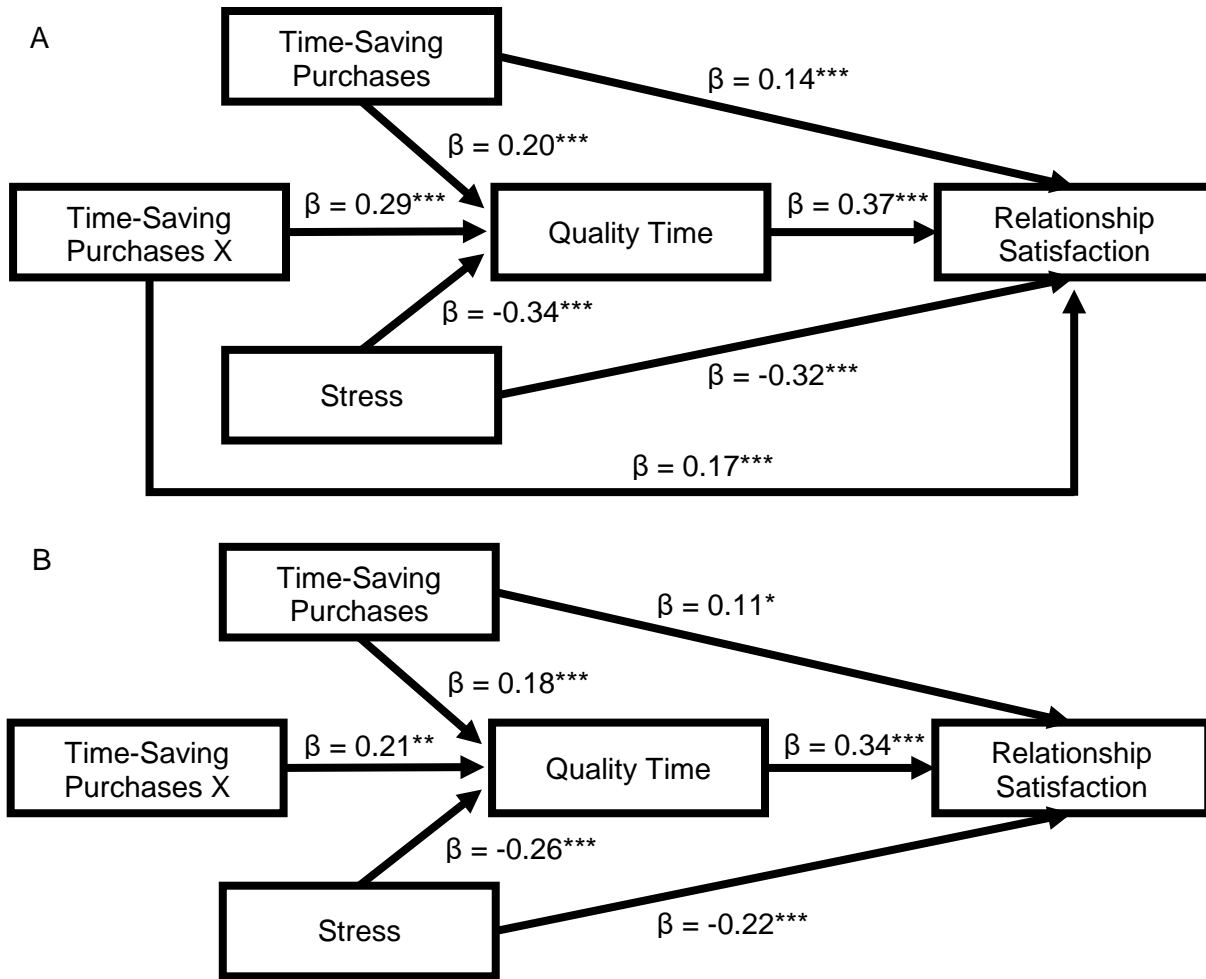


Figure 2. Panel A: Path model of the indirect effect of time-saving purchases on relationship satisfaction through quality time with the partner at grand-mean levels of stress (Study 2a;  $N = 596$  individuals). Panel B: Multilevel path model of the indirect effects of time-saving purchases on relationship satisfaction through quality time with the partner at grand-mean levels of stress (Study 2b;  $N = 386$  individuals nested within 193 couples).

Time-saving purchases: time-saving purchase (1), no time-saving purchase (0).

\* $p < .050$ , \*\* $p < .010$ , \*\*\* $p < .001$ .

Overall, there was no significant indirect effect of time-saving purchases on relationship satisfaction through quality time at low levels of stress, *indirect effect* = -0.00 [-0.04, 0.04]; but there was a significant indirect effect of time-saving purchases on relationship satisfaction through quality time at mean levels of stress, *indirect effect* = 0.19 [0.11, 0.30] and a stronger indirect effect at high levels of stress, *indirect effect* = 0.36 [0.27, 0.55]. Thus, those who made time-saving purchases reported higher relationship satisfaction because they spent more quality time with their partner if they were experiencing average or high levels of relationship stress. If they were experiencing low levels of relationship stress, time-saving purchases were not significantly associated with the amount of quality time spent with the partner or relationship satisfaction. Results from our path model were unchanged when including all covariates as predictors of quality time and relationship satisfaction (see the SI for results of this model).

### **Study 2a Discussion**

Study 2a provides additional evidence that time-saving purchases promote greater overall relationship satisfaction; in particular, making time-saving purchases predicted higher relationship satisfaction by enabling respondents to spend more quality time with their partner. The association between quality time and relationship satisfaction was stronger among respondents who reported higher levels of relationship stress. The results from this study indicate that time-saving purchases enable couples to spend more quality time together in the face of stress, explaining how time-saving purchases protect couples from the negative impact of stress.

### **Study 2b**

Study 2b had two primary goals. First, an important limitation of Studies 1a-2a is that all of these studies were conducted with only one member of the couple, such that we were unable to determine whether time-saving purchases promote the relationship satisfaction of both

partners. Building on the results of Studies 1a-2a, we sought to replicate our results by recruiting a sample of dyads. Second, an alternative explanation for the observed association between time-saving purchases and relationship satisfaction across studies is that couples who make time-saving purchases are also better at providing and/or receiving support more generally. Given that social support is a robust predictor of relationship satisfaction (Hilpert et al., 2016), and that people who provide greater social support exhibit more adaptive coping (Schwarzer & Knoll, 2007), time-saving purchases might show no independent association with relationship satisfaction. Instead, the association could be explained by the support that couples receive and provide. To address this possibility, Study 2b examines the role of social support by including validated measures of support receipt and provision.

### **Participants and Procedure**

In Study 2b, we targeted 200 heterosexual couples and were able to collect  $n = 193$  couples through the survey company Qualtrics. Respondents were eligible to complete the study if both partners were employed at least part time outside of the home (over thirty hours per week), married or in a marriage-like relationship, and reported living together. Respondents were asked to independently complete the identical relationship satisfaction, relationship conflict and demographic measures from Studies 1a&2a. Respondents also completed a well-validated assessment of support receipt and provision within the intimate relationship (described below). For descriptive statistics and bivariate correlations, see Table SI.2b.1 and SI.2b.2 in our online supplementary file. As part of a larger study, participants also completed additional measures (see OSF for additional measures: <https://osf.io/zcavu/>).

### **Assessing Social Support**

In addition to completing the same measures from Studies 1a&2a, both partners completed the Supportive Dyadic Coping subscales from the Dyadic Coping Inventory (FDCT-N; Bodenmann, 1997; Donato, Iafrate, & Bertoni, 2009). This questionnaire is widely used, robustly associated with relationship satisfaction, and relatively short (Falconier, Jackson, Hilpert, & Bodenmann, 2015; Hilpert et al., 2016), enabling us to include our key items of interest in this more resource-intensive data collection. We obtained a score for support provided by averaging the seven items from the Supportive Dyadic Coping by Oneself subscale (e.g., “I show him/her my interest and understanding,” and “I take on things that he/she normally does to help him/her out”), and a score for support received by averaging the seven items from the Supportive Dyadic Coping by the Partner subscale (e.g., “My partner shows me his/her interest and understanding,” and “My partner takes on things that I normally do to help me out”).

### **Analytic Approach**

Our data had a nested structure where individuals were nested within couples. Our goal was to examine whether time-saving purchases protected couples' relationship satisfaction from the negative impact of stress by increasing quality time spent together. As a result, to test this model, we conducted our analyses using a series of random intercept multilevel structural equation models using Mplus software (v8; Muthén & Muthén, 1998-2017).

In our central model, each person's own reports of making time-saving purchases, stress, and an interactive term for time-saving purchases X stress were modeled as predictors of their own reports of quality time spent with the partner at Level 1. Additionally, each person's own reports of making time-saving purchases, stress, quality time spent with the partner, and interactive terms for these variables (i.e., time-saving purchases X stress, time-saving purchases X quality time, and quality time X stress) were included as predictors of their own relationship

satisfaction at Level 1. There were no significant interactive effects of time-saving purchases, stress, or quality time in predicting relationship satisfaction and these interactions were dropped from the final model. However, the model with all interactive effects is in the SI (Table SI.2b.3). In all of our models, we centered all continuous predictors on the mean for all respondents before inclusion and used maximum likelihood to estimate our models. To probe significant interactive effects, we re-centered the stress variable at one standard deviation above and below the mean and reran the model with re-centered variables. We estimated the significance of indirect effects of time-saving purchases and relationship satisfaction through quality time with the partner by obtaining Bayesian credible intervals with 100,000 iterations. We confirmed model convergence by re-running the Bayes-estimated models with 200,000 iterations and ensuring that there were no changes to the Proportional Scale Reduction factor (Muthén & Asparouhov, 2012).

## Results

**Time-saving purchases.** In this study, 33% of female partners and 31% of male partners reported spending money on time-saving purchases with their partner in a typical month. There was 84% cross-partner agreement,  $Kappa = 0.54(0.07)$ ,  $p < 0.001$ .

**Main model.** Results of our main analyses are presented in Panel B of Figure 2. As can be seen in Figure 2 Panel B, and consistent with Study 2a, there was a significant interaction between each person's own levels of stress and reports of time-saving purchases in predicting quality time spent with the partner,  $\beta = 0.21$ ,  $B = 0.76(0.23)$ ,  $Z = 3.26$ ,  $p = 0.001$ . In turn, more quality time spent with the partner was significantly associated with higher levels of relationship satisfaction,  $\beta = 0.34$ ,  $B = 0.29(0.04)$ ,  $Z = 7.17$ ,  $p < 0.001$ .

Consistent with Study 2a, at low levels of stress (1SD below the mean), time-saving purchases were not significantly associated with quality time spent with the partner,  $\beta = 0.06$ ,  $B = 0.20(0.21)$ ,  $Z = 0.95$ ,  $p = 0.343$ . At mean levels of stress, making time-saving purchases was significantly associated with more quality time spent with the partner,  $\beta = 0.18$ ,  $B = 0.55(0.16)$ ,  $Z = 3.44$ ,  $p = 0.001$ . At high levels of stress (1SD above the mean), there was a stronger significant association between making time-saving purchases and more quality time spent with the partner,  $\beta = 0.32$ ,  $B = 1.01(0.20)$ ,  $Z = 5.07$ ,  $p < 0.001$ . Consistent with Study 2a, there were significant indirect effects of time-saving purchases on relationship satisfaction through quality time at mean, *Indirect effect* = 0.16, 95% CI[0.07, 0.27], and high levels of stress, *Indirect effect* = 0.29, 95% CI[0.17, 0.45], but not at low stress, *Indirect effect* = 0.06, 95% CI[-0.07, 0.19]. Results were unchanged when including material purchases (1 = yes), experiential purchases (1 = yes), age, gender (1=male), work hours, household income, and number of children in the home in the model as predictors of quality time and relationship satisfaction. Results were also similar when we included each person's own reports of support provision to and support receipt from the intimate partner as predictors of quality time and relationship satisfaction (See SI for models).

### **Study 2b Discussion**

Study 2b offers additional evidence for our full conceptual model in a sample of dyads in relationships: couples who made time-saving purchases together with their partner in a typical month spent more quality time together, in turn promoting relationship satisfaction (H1-H4). These benefits of time-saving purchases in increasing quality time with the partner were more pronounced for couples who were experiencing higher (vs. lower) levels of stress (H4). These stress-buffering effects occurred even when controlling for a variety of potentially confounding



variables including age, gender, weekly working hours, number of children living at home, household income, and social support received and provided within the intimate relationship. Overall, the results of Study 2b provide further evidence that time-saving purchases can make couples resilient to the negative consequences of stress by helping couples experiencing high levels of stress spend more quality time together.

### **Studies 3a&b**

Despite the consistency of the results observed across studies, several issues remain, most critically the possibility of self-selection: thus far, we cannot address the possibility that happier couples might be more interested in buying time simply because they already want to spend more time together. Study 3a seeks to provide evidence that time-saving purchases causally increase the amount of quality time partners spend together which, as in our earlier studies, should in turn predict relationship closeness. We use a validated recollection paradigm to provide experimental evidence that spending money on time-saving purchases can facilitate quality time together and promote relationship satisfaction. Following prior research (Whillans et al., 2017), we compared the benefits of making time-saving purchases as a couple to those of making material purchases as a couple, to control for the experience of reflecting on a purchase.

### **Overview**

Study 3a uses a well-validated recollection paradigm to examine the causal impact of time-saving purchases on relationship satisfaction (e.g., Chen & Mogilner, 2017; Van Boven & Gilovich, 2003). In both studies, MTurk participants completed an experiment in exchange for \$0.80 USD. Participants were eligible to participate if they were married or in a marriage-like relationship, lived together with their partner, and reported being employed at least part-time. Participants first reported their overall relationship satisfaction. Next, participants were randomly

assigned to a *time-saving purchase* or a *material purchase* condition. Participants then completed post-purchase relationship satisfaction measures, and other demographics.

We pre-registered Study 3a through OSF (<https://osf.io/ky289>).

### **Measures and Manipulations**

**Relationship satisfaction (T1).** Participants reported their baseline relationship satisfaction using the identical four-item measure from Studies 1a, 2a, and 2b ( $\alpha = 0.93$ ).

**Condition assignment.** After completing the T1 relationship satisfaction measures, participants were randomly assigned to the material or time-saving purchase condition.

In the *time-saving purchase condition*, respondents were asked to reflect and write about a time in which they had spent approximately \$40 on a time-saving purchase. Participants were asked to recall the last time that themselves and their partner had spent approximately \$40 “with the primary intention of acquiring free time: a purchase that allowed you and your partner to have more free time.” The wording of this prompt was nearly identical to previously published research (e.g., Whillans et al., 2017), except that this prompt required participants to reflect on a time-saving purchase they had made together with their partner.

In the *material-purchase condition*, respondents were asked to reflect on and write about the most recent time they had spent approximately \$40 on a material purchase together with their partner. Specifically, participants were asked to recall the last time themselves and their partner had spent \$40 together “with the primary intention of acquiring a material good: a tangible object that is kept in one’s possession.” The items and the wording of this prompt were nearly identical to previously published research (e.g., Van Boven & Gilovich, 2003), except that participants reflected on a time they had spent money on a material purchase together with their partner.

**Relationship satisfaction (T2).** After reflecting and writing about a time-saving or material purchase, participants completed several post-relationship satisfaction measures. Participants reported how much the purchase affected their relationship with their romantic partner on a scale from -5 = *Weakened the Relationship Significantly* to +5 = *Strengthened the Relationship Significantly* (Chan & Mogilner, 2017). Participants then reported about the extent to which the purchase they reflected on made them feel close to their partner, connected to their partner, appreciative of their partner, grateful for their partner, and supported by their partner. Participants responded to these items on a scale from 1 = *Strongly Disagree* to 7 = *Strongly Agree* (Chan & Mogilner, 2017). These items were standardized and then averaged across as an assessment of post-purchase relationship satisfaction ( $\alpha = 0.93$ ).

**Quality time.** Participants reported the extent to which the purchase “enabled my partner and I to spend more quality time together” from 1 = *Strongly Disagree* to 7 = *Strongly Agree*.

**Manipulation check.** As a manipulation check, participants reported how much time the purchases cost or saved (-3 = *Cost a lot of time overall* to +3 = *Saved a lot of time overall*).

**Purchase differences.** Purchases can differ on many characteristics, and we included measures assessing these differences to use as controls in our analyses. First, purchases can differ in how ordinary or extraordinary they are (Sussman & Alter, 2012) and many people, and especially younger individuals, derive greater happiness from extraordinary purchases than from ordinary purchases (Bhattacharjee & Mogilner, 2014). Thus, we measured the extent to which participants felt that the purchases “should be considered a one-time expense that is unlikely to re-occur” on a scale from 1 = *Strongly Disagree* to 7 = *Strongly Agree*. Another factor that might account for the benefits of time-saving purchases is enhanced social status. To the extent that buying time signals one’s time is more valuable than others, time-saving services could be

perceived as higher in social status. Thus, we asked participants to report whether their purchases “were high in social status” from 1=*Strongly Disagree* to 7=*Strongly Agree*. It is also possible that time-saving purchases differ in other ways that promote relationship satisfaction. For example, typical time-saving purchases such as hiring a housecleaner might be perceived as more practical and less fun than typical material purchases such as buying kitchen appliances. Thus, we asked participants the extent to which the recalled purchases were “fun”, “helpful”, and “money well spent” on a scale from 1=*Strongly Disagree* to 7=*Strongly Agree*. We adapted these measures from previously published research (Sussman, Sharma, & Alter, 2015).

**Demographics.** Participants reported their age, how many children they had, their family’s total household income, how many hours they worked per week, and their gender.

### Study 3a Results

**Overview and demographic characteristics.** We targeted and successfully recruited 600 participants to complete the study (Table 1).

**Manipulation check.** As predicted, participants who were randomly assigned to the time-saving purchase condition reported that these purchases saved them significantly more time ( $M = 1.71, SD = 1.29$ ) than participants who were randomly assigned to the material purchase condition ( $M = 0.21, SD = 1.22$ ),  $F(1, 597) = 215.06, p < 0.001$ . See Table SI.3a.1 in our online supplementary for other differences between the material and time-saving purchase conditions.

**Relationship satisfaction.** There were no between condition differences on T1 relationship satisfaction ( $p = 0.117$ ) suggesting successful randomization. There was no overall effect of condition on post-purchase feelings of relationship closeness at T2,  $p = 0.671$ .

**Quality time spent together.** Our conceptual model, and studies thus far, suggest that the benefits of time-saving purchases should emerge *only* when participants spend quality time

together. Thus, we examined whether there was an indirect effect of time-saving purchases on relationship satisfaction via their causal effect on increasing quality time spent with the partner (H3). Consistent with this idea, participants who were randomly assigned to the time-purchase condition were more likely to report that the purchase enabled them to spend quality time together with their partner ( $M = 5.58, SD = 1.23$ ) compared to participants who were randomly assigned to the material purchase condition ( $M = 4.99, SD = 1.42$ ),  $F(1, 598) = 28.82, p < 0.001$ .

We then ran a path model using *lavaan* in R (v.3.3.3; R Core Team, 2013; Rosseel, 2012) in which time-saving (vs. material) purchases were modeled to predict relationship satisfaction through quality time spent with the partner. Maximum likelihood was used to estimate the model. As predicted, time-saving purchases were significantly associated with higher quality time spent together as compared to material purchases,  $\beta = 0.21, B = 0.58(0.11), z = 5.38, p < .001, 95\%CI [0.37, 0.80]$ . In turn, more quality time spent together was significantly associated with higher relationship satisfaction,  $\beta = 0.64, B = 0.40(0.02), z = 19.63, p < .001, 95\%CI [0.36, 0.44]$ . The MCMAM indirect effect with 20,000 replications (MacKinnon et al., 2004; Selig & Preacher, 2008) was significant, *Indirect Effect* = 0.23, 95%CI [0.15, 0.32]. These results held controlling for T1 relationship satisfaction, *Indirect Effect* = 0.24, 95%CI[0.16, 0.32] and when controlling for differences between purchases (i.e., the variables reported in SI.3a.1), *Indirect Effect* = 0.19, 95%CI[0.12, 0.26]. These results suggest that quality time is a critical causal predictor of the relationship benefits of buying time.<sup>5</sup>

### Study 3b

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<sup>5</sup> We also ran an initial, exploratory study examining the benefits of time-saving vs. material purchases using the identical methods reported in Study 3a. The results are statistically identical to those reported in text. To streamline the studies reported and avoid redundancy, we have included the data and syntax for this study on the OSF page for this study as “Study 3b v.1”.

In Study 3a, we used a well-established recollection paradigm to provide causal evidence that time-saving (vs. material) purchases increase the amount of quality time partners spent together, in turn, predicting post-purchase relationship satisfaction. These relationship benefits were not explained by differences in T1 relationship satisfaction or by purchase differences, such as how high in status, fun, or useful the time-saving purchases were. In Study 3a, we did not observe a direct effect of time-saving purchases on post purchase relationship satisfaction. Consistent with our conceptual model, the benefits of buying time could depend on whether these purchases enable couples to spend more time together. Following from these results, we sought to provide critical causal evidence that time-saving purchases increase relationship satisfaction *only* when they enable couples to spend more quality time together (Study 3b).

### **Overview**

In Study 3b, we recruited participants from MTurk for \$0.80USD and used the identical recollection paradigm from Study 3a. After reporting on overall relationship satisfaction, participants were randomly assigned to a *shared* or *non-shared* time-saving purchase condition. Participants completed the identical measures and demographics from Study 3a.

### **Measures and Manipulations**

**Relationship satisfaction (T1).** Participants reported their overall relationship satisfaction using the identical four-item measure from Studies 2 and 3a ( $\alpha = 0.92$ ).

**Condition assignment.** Participants were assigned to a *shared* or *non-shared* time-saving purchase condition. In the *shared condition*, respondents were asked to reflect and write about the most recent time they had spent approximately \$40 on a time-saving purchase with their partner that “enabled you to spend quality time together.” In the *non-shared* condition, respondents were asked to write and reflect about the most recent time in which they had spent

approximately \$40 on a time-saving purchase with their partner where “you did not spend your extra time together.”

**Post-purchase relationship satisfaction (T2).** After reflecting and writing about their most recent time-saving purchase, participants reported how satisfied the purchase made them feel with their partner using the identical six-item measure from Study 3a ( $\alpha = 0.94$ ).

**Manipulation check.** As a manipulation check, we asked participants to report the extent to which the purchase helped them to “spend more quality time with their partner.”

### Study 3b Results

**Overview and demographic characteristics.** We targeted 400 and successfully recruited 401 participants (see Table 1).

**Manipulation check.** As expected, participants who were randomly assigned to the shared purchase condition reported that these purchases enabled their partner and themselves to spend more quality time together ( $M = 6.10, SD = 1.01$ ) compared to participants who were randomly assigned to the non-shared purchase condition ( $M = 4.29, SD = 1.70$ ),  $F(1, 399) = 170.12, p < 0.001$ . See Table SI.3b.1 for all differences between the two purchase conditions.

**T1 relationship satisfaction.** There was no difference between conditions on T1 relationship satisfaction,  $p = 0.921$ , suggesting successful randomization.

**T2 relationship satisfaction.** As predicted, participants who were randomly assigned to the shared time-saving purchase condition reported greater post-purchase relationship satisfaction ( $M = 0.30, SD = 0.68$ ) compared to participants who were randomly assigned to the non-shared condition ( $M = -0.31, SD = 0.93$ ),  $F(1, 399) = 56.15, p < 0.001$ . These results held controlling for T1 satisfaction,  $F(1, 398) = 61.79, p < 0.001$ , and for differences between the shared and non-shared purchases reported in Table SI.3c.1,  $F(1, 392) = 30.01, p < 0.001$ .

### **Study 3b Discussion**

Study 3b provides critical causal evidence that time-saving purchases promote relationship satisfaction *only* when they enable partners to spend more quality time together.

### **General Discussion**

Six studies with nearly 2,500 working adults in committed romantic relationships demonstrate consistent evidence that spending money on time-saving purchases is linked to greater relationship satisfaction. Consistent with our conceptual account, the benefits of time-saving purchases emerged by protecting couples from the negative impact of relationship stress—particularly for couples experiencing chronically high levels. Moreover, we show via both mediation and moderation that time-saving purchases that specifically allow couples to spend quality time together are most beneficial. Collectively, these studies shed light on whether, when, and how time-saving purchases promote relationship satisfaction.

In addition to making contributions to the literatures on relationship stress and satisfaction as well as on time and well-being, these results shed novel light on the links between money and happiness. While most previous research focuses on the implications of daily purchase decisions for individual happiness (Aknin et al., 2012; Dunn, Aknin & Norton, 2008; Matz, Gladstone & Stillwell, 2016; Mogilner, Whillans & Norton, 2018), our results suggest that daily purchases also significantly shape the satisfaction that individuals derive from intimate romantic relationships. In doing so, this research adds to an emerging literature examining the conditions whereby spending promotes happiness (Dunn, Aknin, & Norton, 2014; Dunn, Whillans, Aknin & Norton, 2020), by documenting a previously unexamined daily action that promotes relationship satisfaction: spending money to save time. Moreover, and extending research showing that spending decisions are most likely to promote individual happiness when



they fit with stable personality characteristics (Matz et al., 2016; Park, Ward, Naragon-Gainey, 2017), we show that making daily time-saving purchases is most likely to enhance relationship satisfaction when couples are faced with *consistently* high levels of stress as opposed to days of especially high levels of stress. Moving beyond individual-level decision-making, couples might benefit most if match their consumption behaviors to fit with their daily demands.

These studies also provide the first evidence showing that how people spend their free time matters for unlocking the benefits of time-saving purchases. Across studies, time-saving purchases benefit relationship satisfaction *only* when these purchases increase quality time spent together with one's romantic partner. We have defined quality time broadly, based on research suggesting that it is not necessarily the amount of time or the activities that couples pursue together that predicts relationship satisfaction but rather the subjective quality of the time spent together (Johnson, Zabriskie & Hill, 2006). However, future research should explore whether the benefits of time-saving purchases are even *greater* depending on the types of activities couples engage in with their newly found time. For example, couples who spend this time engaging in novel activities—such as visiting new landmarks or restaurants (Aron, Norman, Aron, McKenna, & Heyman, 2000)—or enacting rituals—like choosing to order their favorite take-out and watch TV on the same night each week (Garcia-Rada, Sezer, & Norton, 2019)—might benefit most from making time-saving purchases. Future work should explore these and related possibilities.

Do couples actually buy time, especially given research suggesting that individuals experience barriers to buying time (Whillans, Dunn, & Norton, 2018)? In an exploratory study, we asked individuals in committed relationships to report how they would spend a windfall of \$40 to promote their own and their partners' happiness. Only 1% - 3 respondents of out 300 - reported that they would make a purchase with the explicit purpose of acquiring more free time;

the majority reported that they would buy a material purchase for their partner (60%). Indeed, we find a potential barrier in our studies: respondents who spent money on time-saving purchases with their partner also reported more interpersonal conflict (see Tables SI.1a.2, SI.2a.2, SI.2b.2). Interpersonal conflict can be uncomfortable and anxiety provoking (Falconier et al., 2015), but anxiety-provoking discussions about money may be necessary for couples to come to the conclusion to use money to buy time. Future work is needed to delineate interventions that encourage time-saving purchases within romantic relationships.

Of course, even if such barriers can be attenuated, income constraints may prevent many couples from buying time on a regular basis. Knowledge of partners' emotional support—even in the absence of receiving instrumental social support—can promote well-being and reduce stress (Creaven & Hughes, 2012; Hofer, Collins, Whillans, & Chen, 2018). In light of this research, it is possible that the mere knowledge that partners would be supportive of time-saving purchases could yield benefits—even in the absence of regularly making these purchases. To provide an initial test of this idea, we conducted a pilot study ( $N = 196$ ) asking respondents in romantic relationships whether they felt that their partner would support them in making time-saving purchases (e.g., “If I wanted to make this/these purchases, my partner would be supportive of this/these purchase/s”). Even in the absence of spending money on time-saving purchases, respondents who reported greater feelings of support reported higher relationship satisfaction.

Another unexplored lever to encourage even income-constrained people to buy time would be for employers to gift employees with time-saving services as an element of compensation. Initial research suggests that rewarding employees with vouchers for time-saving services—such as meal delivery and housecleaning—improves work-life balance and reduces turn-over (Fassiotta et al., 2018). Building on the insights from this research,

companies could provide employees with time-saving vouchers that they could give to *their partners* during work trips or seasonally busy or stressful times at work, which could help couples spend the small amount of time they do have together (instead of doing chores). This practice could help employees provide social support to their spouses while they are unavailable to provide support themselves and when quality time together is especially limited.

### **Conclusion**

Our results suggest that the psychological principles that underlie the benefits of receiving and providing social support in close relationships can also shed light on the benefits of support purchased through the market economy. To our knowledge, this is the first study to position consumption behaviors within stress and coping theory, extending these literatures to suggest that consumer behaviors can be conceptualized as social support – with downstream implications for relationship well-being. In sum, an underutilized path to better relationships may be to support our partners not just with our actions and words, but also with our purchases.

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