

## Time, Money, and Subjective Well-Being

By Cassie Mogilner, Anderson School of Management at UCLA; Ashley Whillans, Harvard Business School; Michael I. Norton, Harvard Business School

### Citation:

Mogilner, C., Whillans, A., & Norton, M. I. (2018). Time, money, and subjective well-being. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of well-being*. Salt Lake City, UT: DEF Publishers. DOI:nobascholar.com

### Abstract:

Time and money are scarce and precious resources: people experience stress about having insufficient time, and worry about having insufficient money. This chapter reviews research showing that the ways in which people spend their time and money, the tradeoffs that people make between having more time or having more money, and the extent to which people focus on each resource can have a significant impact on happiness. Considering subjective well-being (or “happiness”) as a combination of high positive affect, low negative affect, and high feelings of life satisfaction, we explore when, how, and why time and money impact peoples’ anticipated, momentary, and lasting happiness.

**Keywords:** Time, Money, Trade-offs, Happiness, Subjective well-being

---

Time and money are both precious resources that matter for happiness. Many people feel temporally and financially constrained in their day-to-day lives (Goodin, Rice, Bittman, & Saunders, 2005; Perlow, 1999; Rheault, 2011), wishing that they had more time and more money (Hershfield, Mogilner, & Barnea, 2016). Having more money is associated with experiencing greater daily happiness up to approximately \$75,000 of household income per year, with additional gains in life satisfaction beyond that amount (Kahneman & Deaton, 2010). Having more spare time is also associated with greater happiness and life satisfaction, even after controlling for income, and even amongst people who say they like being busy (Kasser & Sheldon, 2009).

Beyond the absolute amount of free time and money they have (Kahneman & Deaton, 2010; Kasser & Ryan, 1993; Kasser & Sheldon, 2009), the extent to which people value each resource and the ways people spend their discretionary time and money can significantly impact their well-being. For example, recent findings show that even after controlling for the amount of time and money people have available, those who value time over money report greater happiness (Hershfield et al., 2016; Whillans, Weidman, & Dunn, 2016).

Still, there are many related open questions pertaining to the relationships between time, money, and happiness—such as when and how valuing time over money impact happiness, as well as the meaning that each resource assumes in people’s daily experiences and their lives more broadly. For instance, research suggests that inexpensive, everyday pleasures, such as drinking a cold beer on a warm day, may predict happiness beyond major life events, such as winning the lottery or starting a new job (Gilbert, 2006). It has been similarly argued that the key to unlocking long-lasting changes in happiness involves spending time on activities that do not require a lot of money, but do provide small frequent boosts in mood, such as exercise and religious practice (Mochon, Norton, & Ariely, 2008). More specifically, the extent to which people prioritize time versus money within each day or in their broader life decisions might have important yet differential effects for subjective well-being. Similarly, the happiness that follows from decisions about how to spend each resource may depend on when happiness is measured.

Using a definition of subjective well-being (i.e., “happiness”) as a combination of high positive affect (i.e., feeling happy in the moment), low negative affect (i.e., not feeling sad in the moment), and high life satisfaction (i.e., evaluating one’s overall life as positive; Diener, 1994; Diener et al., 2017; Diener &

Lucas, 1999; Sheldon, 2013), this chapter will explore when, how, and why time and money impact people's momentary and lasting happiness.

## **Some Differences between Time and Money**

Benjamin Franklin encouraged people to equate time and money in his adage, "Time is money." Yet, mounting research shows that people think about time and money in vastly different ways. Moreover, the ways that people think about these resources can have significant implications for how people behave, with consequences for their daily and overall happiness.

In particular, money has a readily exchangeable market and can be saved and borrowed across time periods, which is not true of time. Whereas a loss of \$100 today has the potential of being earned back tomorrow, a lost hour cannot be recuperated, and the 24 hours comprising each day renews every morning. Because money is more fungible than time (Leclerc, Schmitt, & Dube, 1995; Soster, Monga, & Bearden, 2010; Zauberan & Lynch, 2005), people are more prone to carefully plan their temporal expenditures than their financial ones (particularly for the short run; Lynch, Netemeyer, Spiller, & Zammit, 2009), and are more averse to the risk of losing or wasting their time than their money (Leclerc et al., 1995). For instance, people are less likely to select the chance of waiting 90 minutes over waiting 60 minutes for sure than they are to select the chance of losing \$15 over losing \$10 for sure (Leclerc et al., 1995).

It is also harder to account for expenditures of time than money (Saini & Monga, 2008). Because time is more ambiguous than money, people pay less attention to sunk costs involving time than money (Soman, 2001; Soster et al., 2010), and people can more easily rationalize poor or excessive investments of time than of money (Okada, 2005; Okada & Hoch, 2004). As a result, people prefer to invest time rather than money to acquire hedonic goods (Okada, 2005). Similarly, people have greater difficulty predicting future temporal obligations than monetary ones, which makes people more prone to overcommit their future time than their future money (Zauberan & Lynch, 2005).

While these attributes differentiate time and money as resources, time and money also differ in their perceived connection to people's self-concepts. People view their temporal expenditures as more reflective of who they are as a person than they do their monetary expenditures (Gino & Mogilner, 2014; Mogilner & Aaker, 2009). Consequently, people view donations of time as more moral and self-expressive than donations of money (Reed, Aquino, & Levy, 2007), and people often prefer to make donations of time versus money, even when these donations are less effective (Olivola & Shafir, 2013). People also like products more when they think about the time they have spent with that product versus the money they have spent (Mogilner & Aaker, 2009).

Not only are people's experiences more critical to their personal narrative than material goods (Carter & Gilovich, 2012), but the ways people spend their time literally sum up to the days and the life they live (Mogilner, Hershfield, & Aaker, 2017). So, even though people can buy goods to express aspects of their identity (Belk, 1988; Richins & Dawson, 1992), expenditures of money do not constitute people's lives in the same way that expenditures of time do. People who prioritize the accumulation of material goods (materialism) thus typically report lower subjective well-being (Belk, 1985; Kasser & Ryan, 1993, 1996; Richins, 1994; Richins & Dawson, 1992; Van Boven, 2005).

## **Focusing on Time versus Money**

Partly because of these differences between time and money, the extent to which each resource is salient can influence behaviors that have implications for subjective well-being. For example, the extent to which people are focused on time versus money influences moral behavior. In the context of charitable giving, those led to consider giving time (vs. money) give more time *and* more money, because they imagine the happiness they would feel from engaging with the cause (Liu & Aaker, 2008). Being primed with time (vs. money) also reduces people's tendencies to cheat in games that award money or pride (Gino & Mogilner, 2014). Investigations into the effects of focusing on money confirm its deleterious influence on ethicality. Situational reminders of money (and wealth) lead to unethical behavior, particularly when the decision to act unethically has personal benefits (Dubois, Rucker, & Galinsky, 2015; Gino & Pierce, 2009; Kouchaki, Smith-Crowe, Brief, & Sousa, 2013; Miller, Kahle, & Hastings, 2015).

Though ethicality has consequences for subjective well-being (Borgonovi, 2008; Steger, Kashdan, & Oishi, 2008), focusing on time versus money also impacts subjective well-being by motivating behaviors that are directly linked to happiness. Namely, when time (vs. money) is made salient, people become motivated to socialize more and to work less (Mogilner, 2010)—activities that are often tied to immediate happiness and unhappiness, respectively (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). Furthermore, people who are chronically focused on time rather than money (measured by their likelihood

to choose time over money) report feeling happier and more satisfied with life (Hershfield et al., 2016; Whillans et al., 2016). Time-focused individuals exhibit greater social inclinations, preferring to spend their time and money with or on others rather than on themselves (Hershfield et al., 2016; Whillans & Dunn, 2017).

The vast literature on the consequences of money salience similarly reveals anti-social, yet productive, effects of focusing on money. Though not every finding involving money primes has been replicated (Caruso, Shapira, & Landy, 2017; Caruso, Vohs, Baxter, & Waytz, 2013; Rohrer, Pashler, & Harris, 2015), a review of over 150 studies supports two robust categories of effects (Vohs, 2015): compared to neutral primes, reminders of money make people less interpersonally attuned they become unhelpful, stingy, and disinterested in social interaction (Gasiorowska, Zaleskiewicz, & Wygrab, 2012; Vohs, Mead, & Goode, 2006, 2008). On the other hand, reminders of money do motivate people to work—they exert more effort on challenging tasks, work longer, demonstrate better performance, and feel more efficacious (Vohs et al., 2006, 2008).

When people are led to equate time and money by putting a price on their time (by calculating their hourly earnings or receiving hourly vs. salary pay), their behavior changes. They become less willing to spend their time on uncompensated activities, such as volunteering and engaging in pro-environmental behavior (DeVoe & Pfeffer, 2007, 2011; Whillans & Dunn, 2015), they experience greater feelings of psychological and physiological stress (Pfeffer & Carney, 2017), and there is some debated evidence to suggest they become more impatient and less likely to slow down and enjoy leisure activities, such as listening to music (DeVoe & House, 2012; cf. Connors, Khamitov, Moroz, Campbell, & Henderson, 2016).

The vast money priming literature allows the meaning of money to emerge through the conglomeration of findings. The sparser literature on priming time leaves the various meanings of time yet to be fully explored or understood. Future research is needed to identify when and why reminders of time influence behavior and emotional well-being. What features of time reminders lead people to think about their daily schedule (which might be associated with the stress of immediate time pressures) versus their time on Earth (which might motivate more meaningful pursuits; Mogilner et al., 2017)? Thinking about the hours or days that remain before a task is due would likely have different emotional consequences than thinking about the years remaining in one's life. Also, time might mean different things to different people—perhaps varying by culture, geography, or employment. More than money, time is a rich construct that would benefit from further investigation and understanding.

## **When People Focus on Time versus Money**

While the priming findings highlight how people's focus on time or money is subject to situational influence, the extent to which people are focused on time or money also varies by individual (Hershfield et al., 2016; Whillans et al., 2016) and more stable circumstances—such as how much of the resource people have. Having less of a resource, whether it be time or money, makes people focus on it more (Shah, Mullainathan, & Shafir, 2012; Shah, Shafir, & Mullainathan, 2015; Spiller, 2011). Consistent with this theory of scarcity, having less actual or perceived time (or money) increases people's likelihood to choose that resource over the other (Hershfield et al., 2016; Whillans et al., 2016). One study found low income Americans to exhibit similar behavioral intentions as those primed with money, which suggests that money is already highly salient among people who are financially constrained (Mogilner, 2010).

However, in the case of money, abundance also seems to increase its salience. Not only is money more valued (showing a stronger relation to subjective well-being) in richer nations (Tay, Morrison, & Diener, 2014), but very wealthy individuals exhibit similar behaviors as those exposed to reminders of money: savoring simple pleasures less (Quoidbach, Dunn, Petrides, & Mikolajczak, 2010), deriving less meaning from taking care of their children (Kushlev, Dunn, & Ashton-James, 2012), and being less altruistic (Miller et al., 2015).

Though both scarcity and abundance increase people's focus on money, only scarcity draws people's attention to time and its ultimate value. That said, the psychological and behavioral consequences of time scarcity depend on whether time is construed more concretely (e.g., in terms of day-to-day scheduling) or abstractly (e.g., in terms of one's time to be alive; Trope & Liberman, 2010).

The feeling of being pressed for time in people's day-to-day lives (Goodin et al., 2005; Robinson & Godbey, 2010) has been described as a "time famine" (Perlow, 1999). It plagues people of both high and low income (Hamermesh & Lee, 2007), and is particularly acute among working parents (Gimenez-Nadal & Sevilla-Sanz, 2011; Goodin et al., 2005; Strazdins et al., 2011; Sullivan & Gershuny, 2001). Not only does this form of time scarcity produce feelings of stress (Carroll, 2008; Roxburgh, 2004; Strazdins, Welsh, Korda, Broom, & Paolucci, 2016), it also elicits behaviors that undermine subjective well-being. People

who feel time-constrained become less helpful, less active, and less physically healthy (Banwell, Hinde, Dixon, & Sibthorpe, 2005; Darley & Batson, 1973; Jabs et al., 2007; Mogilner, Chance, & Norton, 2012; Strazdins et al., 2011).

In contrast, awareness that one's overall time in life is limited improves subjective well-being by encouraging people to find greater enjoyment in life's ordinary pleasures and close relationships (Bhattacharjee & Mogilner, 2014; Carstensen, Isaacowitz, & Charles, 1999; Cozzolino, Sheldon, Schachtman, & Meyers, 2009; Cozzolino, Staples, Meyers, & Samboceti, 2004; Kurtz, 2008; Mogilner, Aaker, & Kamvar, 2012; Mogilner, Kamvar, & Aaker, 2011). For instance, when people perceive their future time as more limited (which tends to happen with age; Carstensen et al., 1999), they derive greater happiness from ordinary experiences, such as eating a piece of chocolate, basking in a sunny morning, or receiving a text from a friend (Bhattacharjee & Mogilner, 2014). Additionally, the salience of limited time left in life leads people to feel greater happiness from feeling calm than from feeling excited (Mogilner et al., 2011), to pursue emotionally relevant goals (Fung & Carstensen, 2006), to behave more generously (Cozzolino et al., 2004), and to prioritize close interpersonal connections (Carstensen et al., 1999). It is in realizing that one's time in life is limited that people become more deliberate in how they spend their time and extract greater happiness from those activities.

## Happier Ways to Spend Time

Though happiness is partly influenced by inherited temperament (Lykken & Tellegen, 1996; Nes & Røysamb, 2015) and circumstances (Fujita & Diener, 2005; Lucas, 2007), the way people choose to spend their time within and across days is also a substantial determinant of happiness (Lyubomirsky, Sheldon, & Schkade, 2005).

To promote daily happiness, people should consider spending more time engaging in activities that elicit positive vs. negative mood (e.g., Krueger, Kahneman, Schkade, Schwarz, & Stone, 2009). To identify what activities promote positive (and negative) mood, researchers have conducted studies using the Day Reconstruction Methodology (DRM). In DRM studies, respondents are asked to reconstruct the activities filling their last 24 hours, episode by episode. Respondents are then asked to report their mood during each episode. Through these studies, researchers have found initial evidence that, on average, people feel more positive emotion when they are engaged in leisure activities, such as exercising and socializing, than when they are engaged in commuting, work, and housework (e.g., Kahneman, Krueger, Schkade, Schwarz & Stone, 2004, 2006). Yet, it is worth noting that in one of the seminal DRM studies on this topic (Kahneman et al., 2006), some respondents reported feeling happier at work (vs. leisure or other activities), suggesting there are individual differences in which time-use activities promote happiness.

Using more sophisticated data collection methods, such as experience sampling and mobile sensing, researchers have further expanded on these DRM findings by exploring what kind of leisure activities people should engage in to reap the greatest happiness. In experience sampling studies, respondents are asked to report how they feel "right now" during randomly selected episodes throughout the day (Csikszentmihalyi & Hunter, 2003; Csikszentmihalyi & Larson, 2014; Hektner, Schmidt, & Csikszentmihalyi, 2007; Napa Scollon, Prieto, & Diener, 2009). In mobile sensing studies, cell phone technology stealthily records participants' activities. Meanwhile, participants respond to messages throughout the day indicating their current mood (Berke, Choudhury, Ali, & Rabbi, 2011; Killingsworth & Gilbert, 2010; Lane et al., 2010; Lathia, Sandstrom, Mascolo, & Rentfrow, 2017; Ma, Xu, Bai, Sun, & Zhu, 2012; Maisonroue, Stevens, Niessen, & Steels, 2009; Rabbi, Ali, Choudhury, & Berke, 2011).

These state-of-the-art methodologies suggest that more active forms of leisure, such as exercising and volunteering, are linked to greater daily positive mood compared to more passive forms of leisure, such as watching TV, relaxing, and napping (Lathia et al., 2017; see also: Smeets, Whillans, Bekkers, & Norton, 2017; Richards et al., 2015; Wang et al., 2012). For example, new research using a mobile app that measures activity level through smart phones shows that people feel happier when they have been moving in the past 25 minutes than when they have been sitting or lying down, regardless of the activity they were engaging in (Lathia et al., 2017). Most participants' movement involved gentle walking, light jogging, and casual cycling, suggesting that even minimal physical exertion can enhance daily mood.

**Cultivate social connection.** Another time-use activity that can promote happiness is spending time with others: Time spent connecting with others tends to be the happiest part of most people's day (Kahneman et al., 2004; Mogilner, 2010), and experiences that are shared produce greater happiness than those experienced alone (Caprariello & Reis, 2013). High quality social relationships are essential for mental and physical health (Diener & Seligman, 2002). Meta-analyses suggest that the health benefits of social connection are comparable to those of exercising regularly and not smoking (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015; Holt-Lunstad, Smith, & Layton, 2010). Even fleeting social

interactions, such as chatting with one's Starbucks barista or a fellow commuter on a bus, can make people feel connected and therefore bolster happiness (Epley & Schroeder, 2014; Sandstrom & Dunn, 2013).

**Help others.** Spending time helping others is another activity that can enhance mood and physical health (Dunn, Aknin, & Norton, 2008; Gimenez-Nadal & Molina, 2015; Liu & Aaker, 2008; Weinstein & Ryan, 2010; Whillans et al., 2016, cf. Whillans, Dunn, Smeets, Bekkers & Norton, 2017). One way that helping others can promote subjective well-being is by reducing the stress associated with feeling time-constrained. Study participants who spent time helping someone else (vs. who spent time on themselves) reported feeling like they had more time, in part because it made them realize all they could accomplish with their time (Mogilner et al., 2012).

**Be active.** As already discussed, engaging in active leisure activities seems to reliably promote happiness (Lathia et al., 2017). Consistent with these findings, people also report greater happiness when they are busy, especially when they can justify their busyness (Hsee, Yang, & Wang, 2010). In North America, busyness is now a status symbol (Bellezza, Pahlia, & Keinan, 2016). Idleness, on the other hand, is extremely upsetting. People would rather shock themselves than be left alone with their own thoughts (Wilson et al., 2014). These findings might help to explain why people who are unemployed (despite their abundance of free-time) report lower levels of daily happiness than those who are employed (Young & Lim, 2014). Notably however, once busyness transforms into feelings of time stress, people experience lower positive mood and life satisfaction—and this effect holds even among people with a stated preference to be busy (Kasser & Sheldon, 2009).

**Increase variety.** Across the activities that fill people's lives, greater variety increases excitement and engagement (Etkin & Mogilner, 2016), which helps to offset the threat of hedonic adaptation (Lyubomirsky et al., 2005). Notably, however, though filling one's day or week with highly varied activities increases happiness, fitting highly varied activities into shorter time periods (e.g., an hour) reduces happiness by making people feel like they have accomplished less (Etkin & Mogilner, 2016). These findings provide initial evidence that multitasking can undermine feelings of productivity and happiness.

Variety across emotional experiences can also have benefits for overall subjective well-being. "Emodiversity"—the variety and relative abundance of the emotions that people typically experience—predicts decreased depression and doctor's visits, over and above mean levels of positive and negative emotion (Quoidbach et al., 2014). Other research has shown that experiencing moderate variability in one's emotional experiences (vs. too much or too little variability) positively predicts happiness and is associated with improved physical health (e.g., Human et al., 2015; Kashdan & Rottenberg, 2010). Too much variability in positive emotion predicts lower life satisfaction and greater depression (Gruber, Kogan, Quoidbach, & Mauss, 2013).

Relatedly, current research suggests that spending too much time engaging in social activity can undermine well-being (Kushlev, Diener, Heintzelman & Oishi, 2017). In light of this possibility that over-investing in "positive" time-use pursuits can come at a cost to well-being, more research is needed to understand individual differences and social/cultural factors that determine people's happiness from working versus leisure, as well as the optimal amount of time that people should spend at work versus engaging in social and leisure activities.

## Savoring Time Spent

In addition to what people spend their time doing, the extent to which people are mentally engaged in those activities can influence resulting happiness (Nakamura & Csikszentmihalyi, 2009). This speaks to the importance of savoring daily experiences. One strategy for savoring daily experiences is turning them into rituals. For example, study participants rated a chocolate as more flavorful and worth savoring when they had completed a ritual prior to consumption (e.g., by unwrapping the chocolate in a specific way; Vohs, Wang, Gino, & Norton, 2013). Also, engaging in the creation of products can make the experience of those products more satisfying—an observation called "the IKEA effect" (Norton, Mochon, & Ariely, 2012).

Another strategy to help people savor experiences includes taking photos of the experience. Taking photos enhances enjoyment of positive experiences by increasing people's engagement with the experience (Diehl, Zauberaman, & Barasch, 2016). Notably, however, taking photos with the intent of posting them on social media pulls people out of the experience and reduces enjoyment of the experience (Barasch, Zauberaman, & Diehl, 2017). Photos taken during such events as concerts and nights out with friends facilitate rediscovery of previously experienced events, which enhances positive mood (Zhang, Kim, Brooks, Gino, & Norton, 2014).

When people are aware their time is running out, they are more likely to savor whatever time they spend. For instance, people imagining it is their last month in their current city derive greater enjoyment from their day-to-day experiences (Layous, Kurtz, Chancellor, & Lyubomirsky, 2017); college students focused on the imminence of graduation engage more in their typical college-related activities and experience greater happiness from them (Kurtz, 2008); and people who temporarily give up something pleasurable derive greater pleasure from it the next time it is consumed (Quoidbach & Dunn, 2013). While extraordinary experiences produce high levels of happiness regardless of the amount of time left in life, ordinary experiences produce high levels of happiness among older people and younger people who perceive their future as limited (Bhattacharjee & Mogilner, 2014). Realizing the preciousness of time encourages people to extract greater happiness from even the most mundane activities.

## Extracting Meaning from Time

Thus far, we have reviewed findings identifying ways to spend time that promote positive mood and immediate feelings of happiness. Yet, a more lasting sense of purpose and meaning in life is also an important factor in subjective well-being (Catapano, Quoidbach, Mogilner, & Aaker, 2017; Diener et al., 2010; Ryan & Deci, 2001). Therefore, in addition to understanding how people should spend their time to maximize their daily mood, it is also important to clarify what activities help to maximize a sense of meaning.

Time-use activities that are rated as low in positive affect (e.g., working or spending time with young children; Kahneman et al., 2004) can be rated high in meaning (Nelson, Kushlev, English, Dunn, Lyubomirsky, 2013; White & Dolan, 2009). These “objectively unpleasant” daily activities can indirectly contribute to greater well-being by enhancing meaning in life (White & Dolan, 2009). People presumably spend their time to satisfy various components of well-being. For instance, they may watch TV seeking pleasure, but they may volunteer at a food bank to feel a greater sense of meaning. To advise people how they should spend their time to maximize subjective well-being, it is therefore important to understand *why* people are engaging in a given task, in addition to *what* people are doing and how they feel while doing it.

Collectively, these findings highlight important areas for future research. More research is needed to understand how best to spend time to maximize daily happiness, as well as life satisfaction. Since moment-to-moment happiness does not simply sum up to one’s memory of the experience or one’s overall evaluation of the experience (e.g., Diener, Wirtz, & Oishi, 2001; Fredrickson & Kahneman, 1993; Wirtz, Kruger, Scollon, & Diener, 2003), an important question then becomes which source of well-being should be optimized to translate into greater well-being each day and over the course of people’s lives (Mogilner & Norton, 2017). Relatedly, more research is needed to understand *when* it is best to prioritize one form of well-being over another. For example, research on psychological flexibility suggests that changing one’s goals to meet the needs of the current situation will likely produce the best results (Kashdan & Rottenberg, 2010).

## Happier Ways to Spend Money

One way to change how people spend their time is to change how they spend their money. The products and services that people purchase (or not) are essentially purchases of time: buying a television is buying time watching TV, paying for housecleaning is buying several hours of free time, and saving for retirement is buying improved future time. Therefore, research identifying what uses of money “pay off” in the most happiness focuses on ways to spend money—such that people spend their time in happier ways (Dunn & Norton, 2013). More specifically, mounting research suggests that the material purchases people make for themselves—from cars to houses to gadgets—often fail to pay off in increased happiness (Dunn & Norton, 2013; Van Boven & Gilovich, 2003). Yet, spending money on others (instead of on the self) and buying experiences (the opposite of tangible possessions) can promote happiness. Finally, a third area of research explores the benefits of using money to directly buy more free time.

One caveat to note is that people who lack discretionary money and are struggling to make ends meet will not often confront decisions for whether and how to spend their money to maximize happiness. Still, many people do have some discretionary income, which makes these insights relevant for a significant portion of the population. Indeed, a large proportion of people living in developed countries have non-trivial discretionary income (OECD Economic Survey of Canada and the United States, 2016), with the average North American household taking home approximately \$30,000 of discretionary income each year (Statistics Canada, 2016; US Census Bureau, 2015).

**Spend on others.** Dunn, Aknin, and Norton (2008) conducted a simple experiment designed to test

whether spending on the self or spending on others leads to greater happiness. On a university campus in Canada, people were given either \$5 or \$20 and instructed to either spend it on themselves or on others by the end of the day. When contacted that night, those assigned to spend on others were happier than those assigned to spend on themselves, regardless of the amount. The happiness from prosocial spending is not limited to wealthier countries: Large-scale survey data assessing the link between charitable giving and well-being in 136 countries reveals a directionally positive link in 120 of the 136 countries, and a significant correlation in a majority of the sampled countries (Aknin et al., 2013).

In general, prosocial behavior is most apt to positively influence personal well-being when the behavior satisfies at least one of three basic needs: relatedness, competence, and autonomy (Weinstein & Ryan, 2010; see also Dunn, Aknin, & Norton, 2014). Perhaps not surprisingly, then, prosocial spending produces more happiness when the giving is conducted face-to-face (e.g., when people buy a friend a coffee at Starbucks and accompany them there; Aknin, Dunn, Sandstrom, & Norton, 2013) and when people spend on strong ties (such as family) rather than weak ties (such as acquaintances; Aknin, Sandstrom, Dunn, & Norton, 2011). In addition, perceiving the prosocial impact—such that people feel their giving is making a difference in the lives of others—heightens the happiness gained from prosocial spending in both their personal lives (Aknin, Dunn, Whillans, Grant, & Norton, 2013) and their professional lives (Grant & Sonnentag, 2010).

**Buy experiences.** An impressive body of research suggests that when spending on the self, it is better to buy experiences than material possessions to maximize subjective well-being (see Gilovich & Kumar, 2015 for a review). In a seminal paper, Van Boven and Gilovich (2003) defined an experiential purchase as “an event or series of events that one lives through” and a material purchase as “a tangible object that is kept in one’s possession.” In the associated series of studies, people who recalled experiential purchases were happier and felt that their money was better spent than those who recalled material purchases.

There are several reasons for the greater happiness from experiential purchases than material ones. For one, people are slower to hedonically adapt to experiences than possessions. In one study, the happiness of participants who purchased experiences decreased more slowly over the ensuing days and weeks than the happiness of people who had purchased material goods (Nicolao, Irwin, & Goodman, 2009). In another study, happiness with experiential purchases even increased over time (Carter & Gilovich, 2010). Another reason for the greater happiness from experiential purchases is that experiences tend to be more emotionally acute and socially connecting than material goods (Chan & Mogilner, 2017). Recipients of experiential gifts therefore feel more connected to their gift-giver than do recipients of material gifts (Chan & Mogilner, 2017). Moreover, whereas material purchases are more likely to be consumed alone, experiential purchases are more likely to be enjoyed with others (Caprariello & Reis, 2013), and the associated feelings of relatedness are at least partly responsible for the ensuing happiness (Howell & Hill, 2009). Furthermore, experiential purchases are more tightly tied to people’s sense of identity, creating happy memories that give people a sense of “who they are” (Carter & Gilovich, 2012). This is yet another reason why people go to great lengths to collect (Keinan & Kivetz, 2011) and protect (Zauberman, Ratner, & Kim, 2009) memories of experiences, and why people find rediscovering those memories so pleasurable (Zhang et al., 2014).

It is worth pointing out that experiential purchases do not always enhance happiness more than material purchases. For example, while experiential purchases produce more intense feelings of happiness (Chan & Mogilner, 2017), material purchases produce more frequent feelings of happiness (Weidman & Dunn, 2016). More research is needed to identify exactly when material versus experiential purchases are more effective at increasing subjective well-being—particularly when looking to maximize happiness in the moment, rather than anticipated or retrospective happiness. More research is also needed to understand whether some material purchases—such as a new car or a home with a view—can promote lasting happiness by helping facilitate positive daily experiences.

**Buy time.** An emerging body of research has explored the benefits of using money to buy more free time. Whillans et al. (2017) document three primary findings. First, people are surprisingly unlikely to report using money to buy time (e.g., paying to delegate common household chores like cleaning, shopping, and cooking), which suggests that buying time is not a common use of money. Second, large-scale surveys of countries ranging from the United States to Denmark to the Netherlands involving both representative samples as well as samples of millionaires demonstrate that buying time is correlated with well-being. Third, an experiment in which people were given \$40 and asked to make a time-saving purchase versus buy a material good showed that buying time led to greater happiness, and these results were driven by the buffering role that buying time played in alleviating time stress. Across studies, the least wealthy participants benefitted the most from spending money on time-saving purchases. These results suggest that people who are pressed for money might also be more likely to be pressed for time, potentially because

they must commute farther to work or are single parents. More research is needed to further understand when and why buying time produces greater levels of well-being.

This review of findings identifies an exploration into the correct balance in spending across the multitude of domains as one clear avenue for future research. Taking just the four spending categories reviewed here, research suggests that while material purchases typically do not pay off in happiness, prosocial spending, experiential purchases, and buying time do. Yet, people clearly must make some material purchases (e.g., they need clothing). So the question remains: What percentage of spending should be allocated across these categories? Second, the research reviewed offers several mediators of the money-happiness link, but which is most important? And even if we assume, for instance, that relatedness is most critical, what spending category best increases feelings of relatedness? Is it spending directly on an experience with someone else, or giving to charity, or even buying time to free up more time to spend with family and friends? More research is needed to compare the relative benefits of different methods for using money to buy happiness. More research is also needed to understand *who* stands to benefit most from spending money in each category. Recent research suggests that personality can moderate the benefits of spending on others and on material purchases (Matz, Gladstone & Stillwell, 2016). Thus, future research should seek to understand how both personality factors and available income interacts to predict the benefits of various spending choices.

## Conclusion

This chapter reviews how thinking about and spending time and money shapes subjective well-being. Notably, many of the effects depend on the temporal context of subjective well-being—is happiness being optimized in the moment or when remembering the past or anticipating the future? Going forward, researchers should more precisely delineate the role of time and money in day-to-day feelings of happiness, forward- and backward-looking feelings of happiness, as well as assessments of living a happy life overall. Researchers should also increase the representativeness and generalizability of the time-use and happiness findings reported in this chapter by conducting research among non-Western samples and respondents from both lower and higher income brackets (Henrich, Heine & Norenzayan, 2010).

Also, though we focused on individuals' happiness as the unit of analysis, future research should consider the implications of time and money for the happiness of relationship pairs, families, organizations, and societies. For example, how do various means of managing, sharing, and giving time and money impact relationship satisfaction? Findings in the relationship literature on shared novel experiences (Aron, Norman, Aron, McKenna & Heyman, 2000), expressions of gratitude (Algoe, Gable, & Maisel, 2010), and rituals (Sezer, Norton, Gino, & Vohs, 2016) highlight this as a ripe area for research. From an organizational perspective, companies might similarly consider how compensating employees with time (e.g., vacations, sabbaticals, flex hours) versus money (e.g., salary, 401k options) translates into job satisfaction.

Time and money are arguably life's most precious resources. Continuing to understand how people spend, think about, and value their time and money will help to answer the broader and more fundamental question of how to maximize individual and societal well-being.

## References

- Aknin, L. B., Barrington-Leigh, C. P., Dunn, E. W., Helliwell, J. F., Burns, J., Biswas-Diener, R., ... & Norton, M. I. (2013). Prosocial spending and well-being: Cross-cultural evidence for a psychological universal. *Journal of Personality and Social Psychology*, *104*(4), 635-652. doi: 10.1037/a0031578
- Aknin, L.B., Dunn, E.W., Sandstrom, G.M., & Norton, M.I. (2013). Does social connection turn good deeds into good feelings? On the value of putting the "social" in prosocial spending. *International Journal of Happiness and Development*, *1*(2), 155-171. doi: 10.1504/IJHD.2013.055643
- Aknin, L.B., Dunn, E.W., Whillans, A.V., Grant, A.M., & Norton, M.I. (2013). Making a difference matters: Impact unlocks the emotional benefits of prosocial spending. *Journal of Economic Behavior and Organization*, *88*, 90-95. doi: 10.1016/j.jebo.2013.01.008
- Aknin, L.B., Sandstrom, G. M., Dunn, E.W., & Norton, M. I. (2011). It's the recipient that counts: Spending money on strong social ties leads to greater happiness than spending on weak social ties. *PLOS ONE*, *6*(2), e17018. doi: 10.1371/journal.pone.0017018
- Algoe, S. B., Gable, S. L., & Maisel, N. C. (2010). It's the little things: Everyday gratitude as a booster shot for romantic relationships. *Personal Relationships*, *17*(2), 217-233. doi: 10.1111/j.1475-6811.2010.01273.x



- Aron, A., Norman, C. C., Aron, E. N., McKenna, C., & Heyman, R. E. (2000). Couples' shared participation in novel and arousing activities and experienced relationship quality. *Journal of Personality and Social Psychology*, 78(2), 273-284. doi: 10.1037/0022-3514.78.2.273
- Banwell, C., Hinde, S., Dixon, J., & Sibthorpe, B. (2005). Reflections on expert consensus: A case study of the social trends contributing to obesity. *The European Journal of Public Health*, 15(6), 564-568. doi: 10.1093/eurpub/cki034
- Barasch, A., Zauberman, G., & Diehl, K. (2017). How the intention to share can undermine enjoyment: Photo-taking goals and evaluation of experiences. Working paper.
- Belk, R. W. (1985). Materialism: Trait aspects of living in the material world. *Journal of Consumer Research*, 12(3), 265-280. doi: 10.1086/208515
- Belk, R.W. (1988). Possessions and the extended self. *Journal of Consumer Research*, 15(2), 139-168. doi: 10.1086/209154
- Bellezza, S., Paharia, N., & Keinan, A. (2016). Conspicuous consumption of time: When busyness and lack of leisure time become a status symbol. *Journal of Consumer Research*, 44(1), 118-138. doi: 10.1093/jcr/ucw076
- Berke, E. M., Choudhury, T., Ali, S., & Rabbi, M. (2011). Objective measurement of sociability and activity: Mobile sensing in the community. *The Annals of Family Medicine*, 9(4), 344-350. doi: 10.1370/afm.1266
- Bhattacharjee, A., & Mogilner, C. (2014). Happiness from ordinary and extraordinary experiences. *Journal of Consumer Research*, 41(1), 1-17. doi: 10.1086/674724
- Borgonovi, F. (2008). Doing well by doing good: The relationship between formal volunteering and self-reported health and happiness. *Social Science & Medicine*, 66(11), 2321-2334. doi: 10.1016/j.socscimed.2008.01.011
- Caprariello, P. A., & Reis, H. T. (2013). To do, to have, or to share? Valuing experiences over material possessions depends on the involvement of others. *Journal of Personality and Social Psychology*, 104(2), 199. doi: 10.1037/a0030953
- Carroll, J. (2008). *Time pressures, stress common for Americans*. Gallup Poll Social Series. Retrieved from: <https://www.gallup.com/poll/103456/Time-PressuresStress-Common-Americans.aspx>
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54(3), 165-181. doi: 10.1037/0003-066X.54.3.165
- Carter, T. J., & Gilovich, T. (2010). The relative relativity of material and experiential purchases. *Journal of Personality and Social Psychology*, 98(1), 146-159. doi: 10.1037/a0017145
- Carter, T. J., & Gilovich, T. (2012). I am what I do, not what I have: The differential centrality of experiential and material purchases to the self. *Journal of Personality and Social Psychology*, 102(6), 1304-1317. doi: 10.1037/a0027407
- Caruso, E. M., Shapira, O., & Landy, J. F. (2017). Show me the money: A systematic exploration of manipulations, moderators, and mechanisms of priming effects. *Psychological Science*, 28(8), 1148-1159. doi: 10.1177/0956797617706161
- Caruso, E. M., Vohs, K. D., Baxter, B., & Waytz, A. (2013). Mere exposure to money increases endorsement of free-market systems and social inequality. *Journal of Experimental Psychology: General*, 142(2), 301-306. doi: 10.1037/a0029288
- Catapano, R., Quoidbach, J., Mogilner, C., & Aaker, J. (2017). Finding happiness in meaning. Working paper.
- Chan, C., & Mogilner, C. (2017). Experiential gifts foster stronger social relationships than material gifts. *Journal of Consumer Research*, 43(6), 913-931. doi: 10.1093/jcr/ucw067
- Connors, S., Khamitov, M., Moroz, S., Campbell, L., & Henderson, C. (2016). Time, money, and happiness: Does putting a price on time affect our ability to smell the roses? *Journal of Experimental Social Psychology*, 67, 60-64. doi: 10.1016/j.jesp.2015.08.005
- Cozzolino, P. J., Sheldon, K. M., Schachtman, T. R., & Meyers, L. S. (2009). Limited time perspective, values, and greed: Imagining a limited future reduces avarice in extrinsic people. *Journal of Research in Personality*, 43(3), 399-408. doi: 10.1016/j.jrp.2009.01.008
- Cozzolino, P. J., Staples, A. D., Meyers, L. S., & Samboceti, J. (2004). Greed, death, and values: From terror management to transcendence management theory. *Personality and Social Psychology*

*Bulletin*, 30(3), 278-292. doi: 10.1177/0146167203260716

Csikszentmihalyi, M., & Hunter, J. (2003). Happiness in everyday life: The uses of experience sampling. *Journal of Happiness Studies*, 4(2), 185-199. doi: 10.1023/A:1024409732742

Csikszentmihalyi, M., & Larson, R. (2014). Validity and reliability of the experience-sampling method. In *Flow and the foundations of positive psychology* (pp. 35-54). Springer Netherlands. doi: 10.1007/978-94-017-9088-8\_3

Darley, J. M., & Batson, C. D. (1973). "From Jerusalem to Jericho": A study of situational and dispositional variables in helping behavior. *Journal of Personality and Social Psychology*, 27(1), 100-108. doi: 10.1037/h0034449

DeVoe, S. E., & House, J. (2012). Time, money, and happiness: How does putting a price on time affect our ability to smell the roses? *Journal of Experimental Social Psychology*, 48(2), 466-474. doi: 10.1016/j.jesp.2011.11.012

DeVoe, S. E., & Pfeffer, J. (2007). Hourly payment and volunteering: The effect of organizational practices on decisions about time use. *Academy of Management Journal*, 50(4), 783-798. doi: 10.5465/AMJ.2007.26279171

DeVoe, S. E., & Pfeffer, J. (2011). Time is tight: How higher economic value of time increases feelings of time pressure. *Journal of Applied Psychology*, 96(4), 665-676. doi: 10.1037/a0022148

Diehl, K., Zauberman, G., & Barasch, A. (2016). How taking photos increases enjoyment of experiences. *Journal of Personality and Social Psychology*, 111(2), 119-140. doi: 10.1037/pspa0000055

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research*, 31(2), 103-157. doi: 10.1007/BF01207052

Diener, E., Heintzelman, S. J., Kushlev, K., Tay, L., Wirtz, D., Lutes, L. D., & Oishi, S. (2017). Findings all psychologists should know from the new science on subjective well-being. *Canadian Psychology/Psychologie Canadienne*, 58(2), 87-104. doi: 10.1037/cap0000063

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

Diener, E., & Seligman, M. E. (2002). Very happy people. *Psychological Science*, 13(1), 81-84. doi: 10.1111/1467-9280.00415

Diener, E., Wirtz, D., & Oishi, S. (2001). End effects of rated life quality: The James Dean effect. *Psychological Science*, 12(2), 124-128. doi: 10.1111/1467-9280.00321

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, 97(2), 143-156. doi: 10.1007/s11205-009-9493-y

Dubois, D., Rucker, D. D., & Galinsky, A. D. (2015). Social class, power, and selfishness: When and why upper and lower class individuals behave unethically. *Journal of Personality and Social Psychology*, 108(3), 436-449. doi: 10.1037/pspi0000008

Dunn, E. W., Aknin, L. B., & Norton, M. I. (2008). Spending money on others promotes happiness. *Science*, 319(5870), 1687-1688. doi: 10.1126/science.1150952

Dunn, E.W., Aknin, L.B., & Norton, M.I. (2014). Prosocial spending and happiness: Using money to benefit others pays off. *Current Directions in Psychological Science*, 23, 41-47. doi: 10.1177/0963721413512503

Dunn, E. W. & Norton, M. I. (2013). *Happy money: The science of smarter spending*. New York, NY: Simon & Schuster.

Epley, N., & Schroeder, J. (2014). Mistakenly seeking solitude. *Journal of Experimental Psychology: General*, 143(5), 1980-1999. doi: 10.1037/a0037323

Etkin, J., & Mogilner, C. (2016). Does variety among activities increase happiness? *Journal of Consumer Research*, 43(2), 210-229. doi: 10.1093/jcr/ucw021

Fredrickson, B.L., & Kahneman, D. (1993). Duration neglect in retrospective evaluations of affective episodes. *Journal of Personality and Social Psychology*, 65(1), 45-55. doi: 10.1037/00223514.65.1.45

Fujita, F., & Diener, E. (2005). Life satisfaction set point: Stability and change. *Journal of Personality and Social Psychology*, 88(1), 158-164. doi: 10.1037/0022-3514.88.1.158

- Fung, H. H., & Carstensen, L. L. (2006). Goals change when life's fragility is primed: Lessons learned from older adults, the September 11 attacks and SARS. *Social Cognition, 24*(3), 248-278. doi: 10.1521/soco.2006.24.3.248
- Gasiorowska, A., Zaleskiewicz, T., & Wygrab, S. (2012). Would you do something for me? The effects of money activation on social preferences and social behavior in young children. *Journal of Economic Psychology, 33*(3), 603-608. doi: 10.1016/j.joep.2011.11.007
- Gilbert, D. (2006). *Stumbling on happiness*. New York, NY: Knopf.
- Gilovich, T. & Kumar, A. (2015). We'll always have Paris: The hedonic payoff from experiential and material investments. In M. Zanna and J. Olson (Eds.), *Advances in experimental social psychology, Vol. 51* (pp. 147-187). New York, NY: Elsevier.
- Gimenez-Nadal, J. I., & Molina, J. A. (2015). Voluntary activities and daily happiness in the United States. *Economic Inquiry, 53*(4), 1735-1750. doi: 10.1111/ecin.12227
- Gimenez-Nadal, J. I., & Sevilla-Sanz, A. (2011). The time-crunch paradox. *Social Indicators Research, 102*(2), 181-196. doi: 10.1007/s11205-010-9689-1
- Gino, F., & Mogilner, C. (2014). Time, money, and morality. *Psychological Science, 25*(2), 414-421. doi: 10.1177/0956797613506438
- Gino, F., & Pierce, L. (2009). The abundance effect: Unethical behavior in the presence of wealth. *Organizational Behavior and Human Decision Processes, 109*(2), 142-155. doi: 10.1016/j.obhdp.2009.03.003
- Goodin, R. E., Rice, J. M., Bittman, M., & Saunders, P. (2005). The time-pressure illusion: Discretionary time vs. free time. *Social Indicators Research, 73*(1), 43-70. doi: 10.1007/s11205-004-4642-9
- Grant, A. M., & Sonnentag, S. (2010). Doing good buffers against feeling bad: Prosocial impact compensates for negative task and self-evaluations. *Organizational Behavior and Human Decision Processes, 111*, 13-22. doi: 10.1016/j.obhdp.2009.07.003
- Gruber, J., Kogan, A., Quoidbach, J., & Mauss, I. B. (2013). Happiness is best kept stable: Positive emotion variability is associated with poorer psychological health. *Emotion, 13*(1), 1-6. doi: 10.1037/a0030262
- Hamermesh, D. S., & Lee, J. (2007). Stressed out on four continents: Time crunch or yuppie kvetch? *The Review of Economics and Statistics, 89*(2), 374-383. doi: 10.1162/rest.89.2.374
- Hektner, J. M., Schmidt, J. A., & Csikszentmihalyi, M. (2007). *Experience sampling method: Measuring the quality of everyday life*. Thousand Oaks, CA: SAGE.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature, 466*(7302), 29. doi: 10.1038/466029a
- Hershfield, H. E., Mogilner, C., & Barnea, U. (2016). People who choose time over money are happier. *Social Psychological and Personality Science, 7*(7), 697-706. doi: 10.1177/1948550616649239
- Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science, 10*(2), 227-237. doi: 10.1177/1745691614568352
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLOS Medicine, 7*(7), e1000316. doi: 10.1371/journal.pmed.1000316
- Howell, R. T., & Hill, G. (2009). The mediators of experiential purchases: Determining the impact of psychological needs satisfaction and social comparison. *Journal of Positive Psychology, 4*(6), 511-522. doi: 10.1080/17439760903270993
- Hsee, C. K., Yang, A. X., & Wang, L. (2010). Idleness aversion and the need for justified busyness. *Psychological Science, 21*(7), 926-930. doi: 10.1177/0956797610374738
- Human, L. J., Whillans, A. V., Hoppmann, C. A., Klumb, P., Dickerson, S. S., & Dunn, E. W. (2015). Finding the middle ground: Curvilinear associations between positive affect variability and daily cortisol profiles. *Emotion, 15*(6), 705-720. doi: 10.1037/emo0000071
- Jabs, J., Devine, C. M., Bisogni, C. A., Farrell, T. J., Jastran, M., & Wethington, E. (2007). Trying to find the quickest way: Employed mothers' constructions of time for food. *Journal of Nutrition Education and Behavior, 39*(1), 18-25. doi: 10.1016/j.jneb.2006.08.011
- Kahneman, D., & Deaton, A. (2010). High income improves evaluation of life but not emotional well-being. *Proceedings of the National Academy of Sciences, 107*(38), 16489-16493. doi: 10.1073/

pnas.1011492107

Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. *Science*, *306*(5702), 1776-1780. doi: 10.1126/science.1103572

Kahneman, D., Krueger, A. B., Schkade, D., Schwarz, N., & Stone, A. A. (2006). Would you be happier if you were richer? A focusing illusion. *Science*, *312*(5782), 1908-1910. doi: 10.1126/science.1129688

Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review*, *30*(7), 865-878. doi: 10.1016/j.cpr.2010.03.001

Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, *65*(2), 410-422. doi: 10.1037/0022-3514.65.2.410

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, *22*(3), 280-287. doi: 10.1177/0146167296223006

Kasser, T., & Sheldon, K. (2009). Time affluence as a path toward personal happiness and ethical business practice: Empirical evidence from four studies. *Journal of Business Ethics*, *84*(2), 243-255. doi: 10.1007/s10551-008-9696-1

Keinan, A. & Kivetz, R. (2011). Productivity orientation and the consumption of collectable experiences. *Journal of Consumer Research*, *37*(6), 935-950. doi: 10.1086/657163

Killingsworth, M. A., & Gilbert, D. T. (2010). A wandering mind is an unhappy mind. *Science*, *330*(6006), 932. doi: 10.1126/science.1192439

Kouchaki, M., Smith-Crowe, K., Brief, A. P., & Sousa, C. (2013). Seeing green: Mere exposure to money triggers a business decision frame and unethical outcomes. *Organizational Behavior and Human Decision Processes*, *121*(1), 53-61. doi: 10.1016/j.obhdp.2012.12.002

Krueger, A. B., Kahneman, D., Schkade, D., Schwarz, N., & Stone, A. A. (2009). National time accounting: The currency of life. In A. Krueger (Ed.), *Measuring the subjective well-being of nations: National accounts of time use and well-being* (pp. 9-86). Chicago, IL: University of Chicago Press.

Kurtz, J. L. (2008). Looking to the future to appreciate the present: The benefits of perceived temporal scarcity. *Psychological Science*, *19*(12), 1238-1241. doi: 10.1111/j.1467-9280.2008.02231.x

Kushlev, K., Diener, E., Heintzelman, S. J., & Oishi, S. (2017). Too much of a good thing: The relationship between social life and subjective well-being is curvilinear. Working paper.

Kushlev, K., Dunn, E. W., & Ashton-James, C. E. (2012). Does affluence impoverish the experience of parenting? *Journal of Experimental Social Psychology*, *48*(6), 1381-1384. doi: 10.1016/j.jesp.2012.06.001

Lane, N. D., Miluzzo, E., Lu, H., Peebles, D., Choudhury, T., & Campbell, A. T. (2010). A survey of mobile phone sensing. *IEEE Communications Magazine*, *48*(9). doi: 10.1109/MCOM.2010.5560598

Lathia, N., Sandstrom, G. M., Mascolo, C., & Rentfrow, P. J. (2017). Happier people live more active lives: Using smartphones to link happiness and physical activity. *PLOS ONE*, *12*(1), e0160589. doi: 10.1371/journal.pone.0160589

Layous, K., Kurtz, J., Chancellor, J., & Lyubomirsky, S. (2017). Reframing the ordinary: Imagining time as scarce increases well-being. *The Journal of Positive Psychology*, 1-8. doi: 10.1080/17439760.2017.1279210

Leclerc, F., Schmitt, B. H., & Dube, L. (1995). Waiting time and decision making: Is time like money? *Journal of Consumer Research*, *22*(1), 110-119. doi: 10.1086/209439

Liu, W., & Aaker, J. (2008). The happiness of giving: The time-ask effect. *Journal of Consumer Research*, *35*(3), 543-557. doi: 10.1086/588699

Lucas, R. E. (2007). Adaptation and the set-point model of subjective well-being: Does happiness change after major life events? *Current Directions in Psychological Science*, *16*(2), 75-79. doi: 10.1111/j.1467-8721.2007.00479.x

Lykken, D., & Tellegen, A. (1996). Happiness is a stochastic phenomenon. *Psychological Science*, *7*(3), 186-189. doi: 10.1111/j.1467-9280.1996.tb00355.x

Lynch Jr, J. G., Netemeyer, R. G., Spiller, S. A., & Zammit, A. (2009). A generalizable scale of propensity to plan: the long and the short of planning for time and for money. *Journal of Consumer Research*, *37*(1),

108-128. doi: 10.1086/649907

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, 9(2), 111-131. doi: 10.1037/1089-2680.9.2.111

Ma, Y., Xu, B., Bai, Y., Sun, G., & Zhu, R. (2012, May). Daily mood assessment based on mobile phone sensing. In *Wearable and implantable body sensor networks (BSN), 2012 ninth international conference* (pp. 142-147). IEEE. doi: 10.1109/BSN.2012.3

Maisonneuve, N., Stevens, M., Niessen, M. E., & Steels, L. (2009). NoiseTube: Measuring and mapping noise pollution with mobile phones. *Information Technologies in Environmental Engineering*, 215-228. doi: 10.1007/978-3-540-88351-7\_16

Matz, S. C., Gladstone, J. J., & Stillwell, D. (2016). Money buys happiness when spending fits our personality. *Psychological Science*, 27(5), 715-725. doi: 10.1177/0956797616663200

Miller, J. G., Kahle, S., & Hastings, P. D. (2015). Roots and benefits of costly giving children who are more altruistic have greater autonomic flexibility and less family wealth. *Psychological Science*, 26(7), 1038-1045. doi: 10.1177/0956797615578476

Mochon, D., Norton, M. I., & Ariely, D. (2008). Getting off the hedonic treadmill, one step at a time: The impact of regular religious practice and exercise on well-being. *Journal of Economic Psychology*, 29(5), 632-642. doi: 10.1016/j.joep.2007.10.004

Mogilner, C. (2010). The pursuit of happiness: Time, money, and social connection. *Psychological Science*, 21(9), 1348-1354. doi: 10.1177/0956797610380696

Mogilner, C., & Aaker, J. (2009). "The time vs. money effect": Shifting product attitudes and decisions through personal connection. *Journal of Consumer Research*, 36(2), 277-291. doi: 10.1086/597161

Mogilner, C., Aaker, J., & Kamvar, S. D. (2012). How happiness affects choice. *Journal of Consumer Research*, 39(2), 429-443. doi: 10.1086/663774

Mogilner, C., Chance, Z., & Norton, M. I. (2012). Giving time gives you time. *Psychological Science*, 23(10), 1233-1238. doi: 10.1177/0956797612442551

Mogilner, C., Hershfield, H., & Aaker, J. (2017). Rethinking time: Implications for well-being. *Consumer Psychology Review*. doi: 10.1002/arcp.1003

Mogilner, C., Kamvar, S. D., & Aaker, J. (2011). The shifting meaning of happiness. *Social Psychological and Personality Science*, 2(4), 395-402. doi: 10.1177/1948550610393987

Mogilner, C., & Norton, M. (2017). Preferences for experienced versus remembered happiness. Working paper.

Nakamura, J., & Csikszentmihalyi, M. (2009). Flow theory and research. In C. R. Synder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 195-206). New York, NY: Oxford University Press.

Napa Scollon, C., Prieto, C. K., & Diener, E. (2009). Experience sampling: Promises and pitfalls, strength and weaknesses. In E. Diener (Ed.), *Assessing well-being: The collected works of Ed Diener* (pp.157-180). New York, NY: Springer.

Nelson, S. K., Kushlev, K., English, T., Dunn, E. W., & Lyubomirsky, S. (2013). In defense of parenthood: Children are associated with more joy than misery. *Psychological Science*, 24(1), 3-10. doi: 10.1177/0956797612447798

Nes, R. B., & Røysamb, E. (2015). The genetics of psychological well-being: The role of heritability and genetics in positive psychology. In M. Pluess (Ed.), *The heritability of subjective well-being: Review and meta-analysis* (pp. 75-96). New York, NY: Oxford University Press.

Nicolao, L., Irwin, J. R., & Goodman, J. K. (2009). Happiness for sale: Do experiential purchases make consumers happier than material purchases? *Journal of Consumer Research*, 36(2), 188-198. doi: 10.1086/597049

Norton, M.I., Mochon, D., & Ariely, D. (2012). The IKEA effect: When labor leads to love. *Journal of Consumer Psychology*, 22(3), 453-460. doi: 10.1016/j.jcps.2011.08.002

OECD Economic Surveys of Canada and the United States (2016). Retrieved from: <http://www.oecdbetterlifeindex.org/countries>. Retrieved on March 8, 2017.

Okada, E. M. (2005). Justification effects on consumer choice of hedonic and utilitarian goods. *Journal of Marketing Research*, 42(1), 43-53. doi: 10.1509/jmkr.42.1.43.56889

Okada, E. M., & Hoch, S. J. (2004). Spending time versus spending money. *Journal of Consumer Research*,

31(2), 313-323. doi: 10.1086/422110

Olivola, C. Y., & Shafir, E. (2013). The martyrdom effect: When pain and effort increase prosocial contributions. *Journal of Behavioral Decision Making*, 26(1), 91-105. doi: 10.1002/bdm.767

Perlow, L. A. (1999). The time famine: Toward a sociology of work time. *Administrative Science Quarterly*, 44(1), 57-81. doi: 10.2307/2667031

Pfeffer, J., & Carney, D. (2017). The economic evaluation of time can cause stress. *Academy of Management Discoveries*, amd-2016. doi: 10.5465/amd.2016.0017

Quoidbach, J., & Dunn, E. W. (2013). Give it up: A strategy for combating hedonic adaptation. *Social Psychological and Personality Science*, 4(5), 563-568. doi: 10.1177/1948550612473489

Quoidbach, J., Dunn, E. W., Petrides, K. V., & Mikolajczak, M. (2010). Money giveth, money taketh away: The dual effect of wealth on happiness. *Psychological Science*, 21(6), 759-763. doi: 10.1177/0956797610371963

Quoidbach, J., Gruber, J., Mikolajczak, M., Kogan, A., Kotsou, I., & Norton, M. I. (2014). Emodiversity and the emotional ecosystem. *Journal of Experimental Psychology: General*, 143(6), 2057-2066. doi: 10.1037/a0038025

Rabbi, M., Ali, S., Choudhury, T., & Berke, E. (2011, September). Passive and in-situ assessment of mental and physical well-being using mobile sensors. In *Proceedings of the 13th international conference on ubiquitous computing* (pp. 385-394). New York, NY: ACM. doi: 10.1145/2030112.2030164

Reed, A., Aquino, K., & Levy, E. (2007). Moral identity and judgments of charitable behaviors. *Journal of Marketing*, 71(1), 178-193. doi: 10.1509/jmkg.71.1.178

Rheault, M. (2011). *Lack of money tops list of Americans' financial worries*. Gallup Poll Social Series: Consumption Habits. Retrieved from: <http://www.gallup.com/poll/148625/lack-money-tops-list-americans-financial-worries.aspx>

Richards, J., Jiang, X., Kelly, P., Chau, J., Bauman, A., & Ding, D. (2015). Don't worry, be happy: Cross-sectional associations between physical activity and happiness in 15 European countries. *BMC Public Health*, 15(1), 1-8. doi: 10.1186/s12889-015-1391-4

Richins, M. L. (1994). Special possessions and the expression of material values. *Journal of Consumer Research*, 21(3), 522-533. doi: 10.1086/209415

Richins, M. L., & Dawson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research*, 19(3), 303-316. doi: 10.1086/209304

Robinson, J., & Godbey, G. (2010). *Time for life: The surprising ways Americans use their time*. University Park, PA: Penn State Press.

Rohrer, D., Pashler, H., & Harris, C. R. (2015). Do subtle reminders of money change people's political views? *Journal of Experimental Psychology: General*, 144(4), e73-e85. doi: 10.1037/xge0000058

Roxburgh, S. (2004). "There just aren't enough hours in the day": The mental health consequences of time pressure. *Journal of Health and Social Behavior*, 45(2), 115-131. doi: 10.1177/002214650404500201

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52(1), 141-166. doi: 10.1146/annurev.psych.52.1.141

Saini, R., & Monga, A. (2008). How I decide depends on what I spend: Use of heuristics is greater for time than for money. *Journal of Consumer Research*, 34(6), 914-922. doi: 10.1086/525503

Sandstrom, G. M., & Dunn, E. W. (2013). Is efficiency overrated? Minimal social interactions lead to belonging and positive affect. *Social Psychological and Personality Science*, 5(4), 437-442. doi: 10.1177/1948550613502990

Sezer, O., Norton, M. I., Gino, F., & Vohs, K. D. (2016). Family rituals improve the holidays. *Journal of the Association for Consumer Research*, 1(4), 509-526. doi: 10.1086/688495

Shah, A. K., Mullainathan, S., & Shafir, E. (2012). Some consequences of having too little. *Science*, 338(6107), 682-685. doi: 10.1126/science.1222426

Shah, A. K., Shafir, E., & Mullainathan, S. (2015). Scarcity frames value. *Psychological Science*, 26(4), 402-412. doi: 10.1177/0956797614563958

Sheldon, K. M. (2013). Individual daimon, universal needs, and subjective well-being: Happiness as the

- natural consequence of a life well lived. In A.S. Waterman (Ed.), *The best within us: Positive psychology perspectives on eudaimonia* (pp. 119-138). Washington, DC: American Psychological Association. doi: 10.1037/14092-007
- Smeets, P., Whillans, A., Bekkers, R., & Norton, M.I. (2017). Control over time predicts greater life satisfaction among millionaires. Working paper.
- Soman, D. (2001). The mental accounting of sunk time costs: Why time is not like money. *Journal of Behavioral Decision Making*, 14(3), 169-185. doi: 10.1002/bdm.370
- Soster, R. L., Monga, A., & Bearden, W. O. (2010). Tracking costs of time and money: How accounting periods affect mental accounting. *Journal of Consumer Research*, 37(4), 712-721. doi: 10.1086/656388
- Spiller, S. A. (2011). Opportunity cost consideration. *Journal of Consumer Research*, 38(4), 595-610. doi: 10.1086/660045
- Statistics Canada (2016). Retrieved from: <http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/index-eng.cfm>
- Steger, M., Kashdan, T., & Oishi, S. (2008). Being good by doing good: Daily eudaimonic activity and well-being. *Journal of Research in Personality*, 42(1), 22-42. doi: 10.1016/j.jrp.2007.03.004
- Strazdins, L., Griffin, A. L., Broom, D. H., Banwell, C., Korda, R., Dixon, J., ... & Glover, J. (2011). Time scarcity: Another health inequality? *Environment and Planning A*, 43(3), 545-559. doi: 10.1068/a4360
- Strazdins, L., Welsh, J., Korda, R., Broom, D., & Paolucci, F. (2016). Not all hours are equal: Could time be a social determinant of health? *Sociology of Health & Illness*, 38(1), 21-42. doi: 10.1111/1467-9566.12300
- Sullivan, O., & Gershuny, J. (2001). Cross-national changes in time-use: Some sociological (hi)stories re-examined. *The British Journal of Sociology*, 52(2), 331-347. doi: 10.1080/00071310120045015
- Tay, L., Morrison, M., & Diener, E. (2014). Living among the affluent: Boon or bane? *Psychological Science*, 25(6), 1235-1241. doi: 10.1177/0956797614525786
- Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, 117(2), 440-463. doi: 10.1037/a0018963
- US Census Bureau (2015). Retrieved from: <https://www.census.gov/data.html>
- Van Boven, L. (2005). Experientialism, materialism, and the pursuit of happiness. *Review of General Psychology*, 9(2), 132-142. doi: 10.1037/1089-2680.9.2.132
- Van Boven, L., & Gilovich, T. (2003). To do or to have? That is the question. *Journal of Personality and Social Psychology*, 85(6), 1193-1202. doi: 10.1037/0022-3514.85.6.1193
- Vohs, K. D. (2015). Money priming can change people's thoughts, feelings, motivations, and behaviors: An update on 10 years of experiments. *Journal of Experimental Psychology: General*, 144(4), e86-e93. doi: 10.1037/xge0000091
- Vohs, K. D., Mead, N. L., & Goode, M. R. (2006). The psychological consequences of money. *Science*, 314(5802), 1154-1156. doi: 10.1126/science.1132491
- Vohs, K. D., Mead, N. L., & Goode, M. R. (2008). Merely activating the concept of money changes personal and interpersonal behavior. *Current Directions in Psychological Science*, 17(3), 208-212. doi: 10.1111/j.1467-8721.2008.00576.x
- Vohs, K.D., Wang, Y., Gino, F., & Norton, M.I. (2013). Rituals enhance consumption. *Psychological Science*, 24(9), 1714-1721. doi: 10.1177/0956797613478949
- Wang, F., Orpana, H. M., Morrison, H., De Groh, M., Dai, S., & Luo, W. (2012) Long-term association between leisure-time physical activity and changes in happiness: Analysis of the prospective national population health survey. *American Journal of Epidemiology*, 176(12), 1095-1100. doi: 10.1093/aje/kws199
- Weidman, A. C., & Dunn, E. W. (2016). The unsung benefits of material things: Material purchases provide more frequent momentary happiness than experiential purchases. *Social Psychological and Personality Science*, 7(4), 390-399. doi: 10.1177/1948550615619761
- Weinstein, N., & Ryan, R. M. (2010). When helping helps: Autonomous motivation for prosocial behavior and its influence on well-being for the helper and recipient. *Journal of Personality and Social Psychology*, 98(2), 222-244. doi: 10.1037/a0016984
- Whillans, A. V., & Dunn, E. W. (2015). Thinking about time as money decreases environmental

behavior. *Organizational Behavior and Human Decision Processes*, 127, 44-52. doi: 10.1016/j.obhdp.2014.12.001

Whillans, A.V., & Dunn, E.W. (2017). Valuing time over money promotes social connection. Working paper.

Whillans, A.V., Dunn, E.W., Smeets, P., Bekkers, R., & Norton, M.I. (2017). Buying time promotes happiness. *Proceedings of the National Academy of Sciences*, 114 (32), 8523-8527. doi: 10.1073/pnas.1706541114

Whillans, A. V., Seider, S. C., Chen, L., Dwyer, R. J., Novick, S., Gramigna, K. J., ... & Dunn, E. W. (2016). Does volunteering improve well-being? *Comprehensive Results in Social Psychology*, 1(1-3), 35-50. doi: 10.1080/23743603.2016.1273647

Whillans, A. V., Weidman, A. C., & Dunn, E. W. (2016). Valuing time over money is associated with greater happiness. *Social Psychological and Personality Science*, 7(3), 213-222. doi: 10.1177/1948550615623842

White, M. P., & Dolan, P. (2009). Accounting for the richness of daily activities. *Psychological Science*, 20(8), 1000-1008. doi: 10.1111/j.1467-9280.2009.02392.x

Wilson, T. D., Reinhard, D. A., Westgate, E. C., Gilbert, D. T., Ellerbeck, N., Hahn, C., ... & Shaked, A. (2014). Just think: The challenge of the disengaged mind. *Science*, 345(6192), 75-77. doi: 10.1126/science.1250830

Wirtz, D., Kruger, J., Scollon, C.N., & Diener, E. (2003). What to do on spring break? The role of predicted, on-line, and remembered experience in future choice. *Psychological Science*, 14(5), 520-524. doi: 10.1111/1467-9280.03455

Young, C., & Lim, C. (2014). Time as a network good: Evidence from unemployment and the standard workweek. *Sociological Science*, 1, 10-27. doi: 10.15195/v1.a2

Zauberman, G., & Lynch Jr, J. G. (2005). Resource slack and propensity to discount delayed investments of time versus money. *Journal of Experimental Psychology: General*, 134(1), 23-37. doi: 10.1037/0096-3445.134.1.23

Zauberman, G., Ratner, R. K., & Kim, B. K. (2009). Memories as assets: Strategic memory protection in choice over time. *Journal of Consumer Research*, 35(5), 715-728. doi: 10.1086/592943

Zhang, T., Kim, T., Brooks, A. W., Gino, F., & Norton, M. I. (2014). A “present” for the future: The unexpected value of rediscovery. *Psychological Science*, 25(10), 1851–1860. doi: 10.1177/0956797614542274



© 2018 Ed Diener. Copyright Creative Commons: Attribution, noncommercial, no derivatives