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Time, money, and happiness: How does putting a price on time affect our ability to smell the roses?

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ABSTRACT

In this paper, we investigate how the impatience that results from placing a price on time impairs individuals' ability to derive happiness from pleasurable experiences. Experiment 1 demonstrated that thinking about one's income as an hourly wage reduced the happiness that participants derived from leisure time on the internet. Experiment 2 revealed that a similar manipulation decreased participants' state of happiness after listening to a pleasant song and that this effect was fully mediated by the degree of impatience experienced during the music. Finally, Experiment 3 showed that the deleterious effect on happiness caused by impatience was attenuated by offering participants monetary compensation in exchange for time spent listening to music, suggesting that a sensation of unprofitably wasted time underlay the induced impatience. Together these experiments establish that thinking about time in terms of money can influence how people experience pleasurable events by instigating greater impatience during unpaid time.

Introduction

Recently there has been substantial interest in how both time and money, arguably two of the most valuable resources individuals possess, affect happiness. If happiness is the most universally agreed upon goal of the human condition (Frey & Stutzer, 2002), then these highly useful and coveted resources should exercise a strong positive influence on happiness. Empirical research, however, reveals a more nuanced relationship between time, money, and happiness. While people typically do predict that earning more money will substantial increase their experience of happiness (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2006), Kahneman and Deaton (2010) find that once income exceeds $75,000, it fails to explain any variance in people's moment-to-moment experiences of happiness. By contrast, Kahneman, Krueger, Schkade, Schwarz, and Stone (2004) find that people experience much greater moment-to-moment happiness when they spend their time socializing with family and friends as compared to either at work or commuting.

Some researchers have focused on the disconnection between the abundant hedonic possibilities offered by money and the surprisingly weak relationship between money and happiness to argue that people are simply failing to spend their money in ways that maximize happiness (Dunn, Gilbert, & Wilson, 2011). For instance, spending money on one's self or on material goods does not appear to be very effective at promoting happiness. Specifically, Dunn, Aknin, and Norton (2008) found that spending money on others made people happier than spending money on themselves and Van Boven and Gilovich (2003) found that spending money on positive experiences promotes happiness more than spending money on positive material purchases.

Other researchers have argued that how we spend our time is the key to understanding and maximizing happiness (Aaker, Rudd, & Mogilner, 2011). For example, choosing between experiences has more impact on happiness than similar choices between material goods (Nicolao, Irwin, & Goodman, 2009) and, unsurprisingly, spending time enjoyably on leisure activities (Lloyd & Auld, 2002) or helping others (Borgonovi, 2008) robustly contributes to individuals' happiness.

Time versus money mindsets

The influence of time and money on happiness may extend beyond simply how these resources are spent, however. Increasing evidence suggests that the mindsets associated with the concepts of time and money can differentially affect the happiness we derive from a given activity. It is widely accepted that Anderson and Bower (1973) were correct in proposing that knowledge and concepts are organized in associative networks. As a consequence, the activation of one concept, by internal or external stimuli, reliably leads to the activation of other concepts within that associative network (Dijksterhuis & Bargh, 2001). This is what is meant when it is said that the concepts of time and money activate different 'mindsets'—they are activating different associative networks of constructs

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to which they respectively relate. Importantly, the activation of networks makes their contents more accessible for influencing complex cognitions and behaviors. For example, activating the stereotype associated with the elderly causes undergraduate participants to walk more slowly (Bargh, Chen, & Burrows, 1996) and subliminally priming the Apple computer logo can lead to higher scores on a creativity test due to associations created through that company's marketing campaigns (Fitzsimons, Chartrand, & Fitzsimons, 2008).

In their study of the mindsets associated respectively with time and money, Liu and Aaker (2008) argue that time activates a more emotional mindset, compared to the economic value mindset activated by money. This is because spending time by definition means having an experience and experiences are invariably accompanied by emotions (Schwarz & Clore, 1996) that are usually more intense than those associated with material goods (Van Boven & Gilovich, 2003; Nicolao et al., 2009). Priming individuals with the concept of time activates goals such as seeking emotional meaning (Liu & Aaker, 2007), spending time with friends and family (Mogilner, 2010) and gaining happiness through charitable donations (Liu & Aaker, 2008).

In contrast, money focuses one on a mindset with economic value maximizing goals (Liu & Aaker, 2008). Those primed with the concept of money choose to spend more time on work (Mogilner, 2010) and volunteer less (Pfeffer & DeVoe, 2009; Vohs, Mead, & Goode, 2006). Furthermore, thinking about the amount of money to allocate to a charity decreases attention to the potential happiness that could result from giving (Liu & Aaker, 2008). Recently, Quoidbach, Dunn, Petrides, and Mikolajczak (2010) have found that priming money decreases the time one will spend savoring the consumption of a delicious piece of chocolate.

When time equals money

In addition to their individual relationships with happiness, interest in the psychological effects of equating time and money is growing due to the prevalence of institutional practices, such as hourly wages, express services, and high speed products, that place a dollar value on time. Whereas typically the value of time is ambiguous (Okada & Hoch, 2004), placing a monetary value on time in the form of an hourly wage can lead people to treat time more like money (Soman, 2001). In ethnographic interviews with technical contractors (i.e., engineers, software developers, technical writers, and information technology specialists) who billed their time and overwhelmingly sold their services to firms in exchange for an hourly wage, Evans, Kunda, and Barley's (2004) analysis found that their informants tended to be economic evaluators of time—evaluating their time narrowly in terms of monetary criteria. Only a small minority of their informants (9 to 14%) evaluated their time using a broader set of criteria, such as personal satisfaction and social obligations. Evans et al. concluded, “When contractors used an economic metric as the sole measure of time, they often discounted the worth of other activities whose economic value was difficult to calculate” (p. 22). Furthermore these informants were “acutely aware that every hour they failed to work was lost compensation” (p. 21).

Research testing the implications of this economic evaluation of time has shown that prompting people to think about their time in terms of money increases their willingness to give up more of their leisure time to earn more money (DeVoe & Pfeffer, 2007a), decreases their willingness to volunteer time (DeVoe & Pfeffer, 2007b), and increases their reliance upon economic factors in evaluating one's overall life satisfaction (DeVoe & Pfeffer, 2009). By extension, the economic evaluation of time appears poised to change how people experience time on a task that is potentially enjoyable but does not bring direct economic returns that are easily quantifiable. In the next section we elaborate upon how economic evaluation can engender more impatience when people see themselves “wasting” potentially profitable time as opposed to when they see concrete economic returns for their time.

Economic value of time

The view that time should be thought of in terms of money was crystallized by Franklin (1748/2004, p. 200) when he wrote:

> Remember, that *time* is money. He that can earn ten shillings a day by his labor, and goes abroad, or sits idle, one half of that day… has really spent, or rather thrown away, five shillings. [Emphasis original]

The understanding of time espoused by Franklin focuses narrowly on the economic opportunity costs of time (i.e., in terms of money). Thus, it prescribes maximizing time's value in a way narrowly focused on monetary acquisition, which differs from attempts to maximize the enjoyment and happiness of experiences. Max Weber (1920) famously discussed this ‘time is money’ mentality as engendering a shift to the use of time for the acquisition of money as an end unto itself. Indeed, this shift in mentality makes it meaningful in our society to speak of *wasting time*, *saving time*, and *using time profitably* (Lakoff & Johnson, 1980). But while economists typically assume people implicitly think about the economic value of time in decisions about how to allocate it (e.g., Becker, 1965), decision-making research reveals that people tend not to think of time in terms of money in their everyday decisions unless prompted to do so (e.g., Soman, 2001; Okada & Hoch, 2004). That is because the opportunity costs of time and its economic value are not necessarily always salient until one is prompted to think about them (Frederick, Novemsky, Wang, Dhar, & Nowlis, 2009; Northcraft & Neale, 1986).

Our contention is that an hourly wage rate for one's time encourages a mindset that features the goal of maximizing the economic value of one's time. Such a mindset would be consistent with the findings of DeVoe and Pfeffer (2007a,b, 2009) and Evans et al. (2004), discussed above. As a consequence, individuals prompted to think about their hourly wage are more likely to experience impatience when this goal is obstructed and they feel that their time is being unprofitably wasted. Although impatience has generated substantial academic interest recently (Bartels & Urminsky, 2011; Chen, Ng, Rao, 2005; Li, 2008; Pyone & Isen, 2011; Van den Bergh, Dewitte, & Warlop, 2008; Zhong & DeVoe, 2010), it remains a loosely defined construct. For the purposes of the present investigation, we adopt a working definition consistent with the vernacular usage of the word: “Impatience” is used here to mean the sense of frustration with, or intolerance of, anything which causes delay.

Our hypothesis is that impatience, caused by a hindrance to the goal of maximizing the economic value of time, can interfere with other, less quantifiable benefits of time's expenditure, specifically hedonic pleasure. Instead of savoring a potentially enjoyable experience and thereby enhancing the happiness derived from it (Bryant, Smart, & King, 2005; Quoidbach, 2009; Tugade & Fredrickson, 2007), an experience becomes viewed as a frustrating and intolerable delay when one is impatient. Indeed, savoring a positive experience, in order to maximize its hedonic payout, is about subjectively prolonging an experience (Bryant, 1989, 2003) whereas people wish to expedite experiences when feeling impatient—the two are incompatible. In three separate experiments, we demonstrate that prompting participants to think about their effective hourly wage diminishes their reported happiness subsequent to unexpected pleasant experiences and that this effect is completely mediated by a greater sense of impatience. Intriguingly, we further demonstrate that this effect is eliminated by explicitly compensating participants for their time during the unexpected pleasant experience, which further supports the idea that thinking about the hourly wage rate of one's time induces a goal of maximizing the economic value of time.