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### The stability of time versus money valuations

Leonard LEE

Michelle P. LEE

*Singapore Management University*, michlee@smu.edu.sg

Gal ZAUBERMAN

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# ASSOCIATION FOR CONSUMER RESEARCH

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Labovitz School of Business & Economics, University of Minnesota Duluth, 11 E. Superior Street, Suite 210, Duluth, MN 55802

## **The Stability of Time Versus Money Valuations**

Leonard Lee, Columbia University, USA

Michelle Lee, Singapore Management University, Singapore

Gal Zauberan, University of Pennsylvania, USA

In this work, we propose that the stability of consumer preferences in decision making differs depending on whether the resource in question is time or money. Two competing hypotheses are tested: whereas prior research has demonstrated greater ambiguity in the value of time (vs. money) thus pointing to less consistency in time valuation, a separate stream of research suggests that money (vs. time) lacks emotional tags and is more difficult to process, pointing to less consistency in money valuation. Our experimental results demonstrate that preferences based on money (vs. time) valuations are less transitive and consistent, supporting the emotion-based account.

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**SPECIAL SESSION SUMMARY**  
**Time is More Precious than Money**  
Stephen A. Spiller, Duke University, USA

**SESSION OVERVIEW**

The allocation of time and money is fundamental to consumer behavior. Previous research comparing time and money has focused on identifying systematic differences in consumers' perceptions and has found that time and money differ in their value ambiguity (Okada and Hoch, 2004), perceived future availability (Zauberman and Lynch, 2005), and degree of personal connection (Mogilner and Aaker, 2009). The four papers in this session advance this research by considering antecedents and implications of the underlying differences between time and money and focusing on time's unique role in decision making as a particularly precious resource. We examine its unanticipated scarcity (Spiller and Lynch), its self-expressive value (Reed, Aquino, Levy, and Fimmel), its implications for the pursuit of happiness (Mogilner), and its role in promoting preference stability (Lee, Lee, and Zauberman).

First, Spiller and Lynch consider why consumers have less time than expected, but not less money. They find that consumers exhibit a greater planning fallacy for time than for money because they plan more for their use of time than money. Next, Reed and colleagues examine why an active moral identity leads to a preference to donate time rather than money and find that donating time is more self-expressive than donating money. Moreover, they consider how this preference for time versus money differs depending on whether the donation is real or hypothetical. The final two papers build on the finding that the mere concept of time increases the weight consumers put on personal connection (Mogilner and Aaker, 2009). First, Mogilner shows that when time rather than money is activated, individuals are more likely to pursue consumption that leads to greater happiness. Finally, Lee and colleagues find that although time's value may be more ambiguous than money's, preferences are more stable when time (rather than money) is the resource of exchange, due to its emotional tags.

**EXTENDED ABSTRACTS**

**“Consumers Exhibit the Planning Fallacy for Time but not Money”**

*Stephen A. Spiller, Duke University, USA*

*John G. Lynch Jr., University of Colorado, Boulder, USA*

The planning fallacy has been defined as “the fact that people invariably underestimate the resources, such as time and money, that will be required to finish a project” (Taylor, Pham, Rivkin, and Armor, 1998, p. 434). Although a planning fallacy for money has been referenced by other researchers (e.g., Kahneman and Tversky, 1979; Kruger and Evans, 2004), empirical research at the personal level has focused exclusively on time plans. Given important differences in perceptions of time and money (e.g., Mogilner and Aaker, 2009; Okada and Hoch, 2004; Zauberman and Lynch, 2005), we pose the question: Does the personal planning fallacy apply to money as it does to time?

Some existing evidence suggests it does not. If individuals expect to spend less time and less money on projects than they actually spend, they will overestimate the amount of “time slack” and “money slack” they have left. Zauberman and Lynch (2005) find that although people overestimate their future time slack, they do not overestimate their future money slack, suggesting the absence of a planning fallacy for money. More direct evidence

comes from Kruger and Evans (2004, Study 1), who found that decomposing a project (e.g., holiday gift shopping) into its component parts (e.g., each person on the list) increased predictions of the amount of time to be spent by more than 30% but only increased predictions of the amount of money to be spent by less than 10%. These findings lead us to hypothesize that individuals exhibit the planning fallacy for time but not for money (H1). We test H1 in Studies 1, 2, and 3.

In Study 1, 2078 members of an online panel reported how much and how frequently they exhibit the planning fallacy for time or money. In support of H1, participants reported exhibiting a greater and more frequent planning fallacy for time than for money.

In Study 2, 93 undergraduates listed short-run and long-run plans for their uses of time and money and reported when they would finish their time plans and how much money they would spend on their money plans. They later reported when they completed their time plans and how much money they spent on their money plans. In support of H1, participants completed their time plans later than planned, but spent less money than planned on their money plans.

The generally accepted explanation for the planning fallacy is that planners focus too much on how they will successfully execute their plan (they take the “inside perspective”), and neglect distributional information of past planning failures and future potential obstacles (they ignore the “outside perspective”; Kahneman and Tversky, 1979; Buehler, Griffin, and Ross, 1994). As a result, planning more leads to a greater planning fallacy. Although this inside versus outside distinction applies equally to time and money plans, people may be more likely to take the inside perspective for time than for money. Lynch, Netemeyer, Spiller, and Zammit (2009) develop and validate a measure of propensity to plan with parallel versions for time and money planning in the short-run and long-run. They find that individuals have a greater propensity to plan for time than for money, suggesting that individuals are more likely to take the inside perspective for time than for money. These findings lead us to hypothesize that individuals with a greater propensity to plan exhibit a greater planning fallacy (H2) and propensity to plan mediates the cross-resource difference in the planning fallacy (H3). We test H2 and H3 in Study 3.

In Study 3, 90 MBA students were asked when they planned to finish their holiday gift shopping, how much money they would spend on their holiday gift shopping, or both. Every day, they reported whether they went shopping the previous day and if they did go shopping, how much money they spent. In support of H1, participants exhibited the planning fallacy for time but not for money. In support of H2, participants with a greater propensity to plan exhibited a greater planning fallacy than those with a lesser propensity to plan. In support of H3, the cross-resource difference in the planning fallacy was mediated by propensity to plan; controlling for propensity to plan, there was no difference in the planning fallacy for time versus money.

This work provides the first systematic comparison of the degree to which consumers exhibit the planning fallacy for time and money and links it to existing work on the “inside perspective.” Due to differences in propensity to plan, consumers exhibit a greater planning fallacy for time than for money, leaving them with less time than expected but not less money and thus making their limited

remaining time all the more precious. This research also reveals a “dark-side” to the propensity to plan, which might otherwise be viewed a priori as a primarily positive trait.

#### **“How and When the Moral Self Motivates Donations of Time versus Money”**

*Americus Reed II, University of Pennsylvania, USA*

*Karl Aquino, University of British Columbia, Canada*

*Eric Levy, University of Washington, USA*

*Stephanie Finnel, University of Pennsylvania, USA*

Donating time and donating money appear equivalent, but consumers treat them differently (Liu and Aaker 2008). Consumers prefer giving time versus an equivalent amount of money when their moral identity is either consistently central to their self-concept or temporarily primed (Reed, Aquino, and Levy 2007). Reed et al. (2007) hypothesized that this effect occurs because emphasizing moral identity makes consumers choose behaviors that express that identity. Giving time (vs. money) should be seen as more expressive of the moral self because it entails greater contact with needy others and hence greater willingness to sacrifice for them. This concern for others characterizes the moral self (Aquino and Reed 2002).

However, Reed et al. (2007) did not directly test their reasoning for why consumers with an activated moral identity prefer giving time versus money; something unrelated to self-expressiveness could be driving their results. We propose the following self-expressiveness hypothesis: activating moral identity strengthens consumers’ belief that giving to charity expresses who they are, and this belief makes them prefer giving time, an act more consistent with the moral identity they want to express than giving money.

But do these self-expressive benefits mean moral identity will always make consumers prefer giving time versus money in real donations? Past research cannot address this question because it considered hypothetical preferences, but we suspect the answer is no. Unlike money, time cannot be replenished through work. Thus consumers may perceive time as scarcer than money and may view giving time as costlier than giving money. They may report a hypothetical preference to give time to express their moral self but be unwilling to bear the costs of giving real time (cf. Batson and Thompson 2001). Both internal (moral identity centrality) and external (temporary moral identity priming) sources of moral motivation, rather than just one as in previous work, may be necessary to induce giving real time versus money. We call this the real donation hypothesis.

Study 1 tested the self-expressiveness hypothesis. The study was a 2 (moral identity prime: high versus low) x 2 (effort: moral versus non-moral) between-subjects design. University participants (N=183) completed two tasks. In the first task, moral identity was primed (Reed et al. 2007). Participants copied words and used them to write a story. In the high (low) moral identity prime condition, the words were traits related (unrelated) to being moral such as compassionate (carefree) (Aquino and Reed 2002). In the second task, participants imagined contributing to an organizational effort. They indicated how self-expressive contributing would be and chose from three hypothetical options: giving \$5, giving \$5 worth of time, or giving nothing. Following Reed et al. (2007), we manipulated the effort’s perceived morality because the identity prime was expected to affect time versus money preferences for a moral but not a non-moral cause. In the moral (non-moral) effort condition, the effort’s objective was to promote volunteering (sell advertising services). Manipulation checks confirmed both manipulations’ effectiveness. Analyses on both dependent measures (self-expressiveness and donation preferences) revealed a moral

identity prime x effort interaction such that priming moral identity led participants to view contributing as more self-expressive and to prefer giving time versus money for moral effort but not non-moral effort. Importantly, self-expressiveness mediated the relationship between the moral identity prime x effort interaction and donation preferences, supporting the self-expressiveness hypothesis.

Study 2 tested the real donation hypothesis. The study was a two-group (moral identity prime: high versus low) between-subjects design with moral identity centrality measured. University participants (N=105) completed three tasks. The first task contained Aquino and Reed’s (2002) moral identity centrality scale. The second task primed moral identity using slide shows. The high moral prime show contained photographs of historical figures acknowledged to be moral (e.g., Gandhi) and of ordinary people expressing concern for each other. The low moral prime show contained photographs of flowers. Manipulation checks confirmed the primes’ effectiveness. In the third task, all participants read the moral effort description from study 1 and received a real donation opportunity. They chose from three options: give part of their \$10 participation payment to the effort, spend time after the experiment aiding the effort, or do nothing. Participants were debriefed afterward and did not really donate. Our analyses of the donation decision revealed a centrality x prime interaction such that higher moral identity centrality increased preference to give time versus money in the high but not low moral prime condition. In support of the real donation hypothesis, both sources of moral motivation were needed to elicit preferences to give real time versus money.

#### **“The Role of Time versus Money in the Pursuit of Happiness”**

*Cassie Mogilner, University of Pennsylvania, USA*

Money is assumed to be critical for pursuit of the American Dream and our unalienable right to be happy. Indeed, when a sample of 127 American university students were asked to share their feelings related to money, “happiness” was the most frequently cited emotion. However, psychology research reveals there to be a weak relationship between money and happiness (e.g., Kahneman et al. 2006), and economists have found Americans’ happiness levels to have remained constant over the past several decades despite an increase in financial wealth (Easterlin 1995). How can we reconcile the assumed association between money and happiness with empirical demonstrations suggesting the two to be largely unrelated?

Exploring the role of our other principle resource, time, may shed some light. An investigation into national allocations of time reveals that while wealth in the U.S. has increased over the last quarter of a century, so too has the number of hours Americans have spent working. In contrast, Europeans have decreased the number of hours spent at work in response to gains in economic wealth, and their happiness levels have increased (Layard 2005). This highlights the possibility that Americans’ extant focus on money as the resource most critical to attaining happiness has been misdirected, and we should instead shift our focus towards time.

To explore this possibility, I conducted four lab and field experiments testing whether directing attention to time (rather than money) can improve Americans’ pursuit of happiness by driving individuals to behave in ways that prior research indicates increase experienced happiness.

Prior research has found that individuals feel greater happiness having spent money to acquire an experience than having spent money to acquire a material possession (Van Boven and Gilovich 2003). Experiments 1A and 1B were conducted to test the hypothesis that increasing the relative salience of time (vs. money) would

increase individuals' tendencies to choose purchases associated with greater happiness.

In experiment 1A, participants were primed with either time or money through incidental exposure to time- or money-related advertisements, and then they were presented with a series of choices between experiential and material purchases. In line with greater happiness, participants who were primed with time (vs. money) were more likely to choose experiential purchases over material purchases. Experiment 1B then demonstrated the robustness of the finding, showing that the effect occurs with an even more subtle prime of time (vs. money) and extends from tradeoffs that participants thought they would make to a choice with real consequence.

With evidence suggesting that activating time (vs. money) can lead people to spend their money in ways associated with greater happiness, experiments 2A and 2B were conducted to test whether priming time (vs. money) would also lead individuals to choose to spend their time in ways associated with greater happiness.

Prior research tracked how a national sample of Americans spent their days, as well as how they felt over the course of their days, and found people to be most happy when socializing and during intimate relations, and to be least happy when working and commuting (Kahneman et al. 2004). Participants in experiment 2A were nonconsciously primed with either time or money using a sentence scramble task, and then asked them to report the extent to which they planned to engage in various activities during the next 24 hours. The results revealed that participants primed with time (vs. money) planned to spend more time engaging in intimate relations and socializing (daily activities associated with greater happiness) and less time working and commuting (daily activities associated with less happiness).

Experiment 2B was a field experiment conducted to test whether such a subtle activation of time (vs. money) could not only impact how individuals plan to spend their time, but also how they actually spend their time. Upon entering a campus café, students were implicitly primed with either time or money while volunteering to complete a sentence scramble task. Those primed with time subsequently spent more time at the café socializing than doing schoolwork, whereas students primed with money spent more time doing schoolwork than socializing.

Together, these findings demonstrate that drawing individuals' attention to time, rather than money, increases their tendencies to spend both their money and their time in ways that are associated with greater happiness. This work contributes to the growing streams of research on time, money, and happiness.

#### **“The Stability of Time versus Money Valuations”**

*Leonard Lee, Columbia University, USA*

*Michelle Lee, Singapore Management University, Singapore*

*Gal Zauberman, University of Pennsylvania, USA*

Consumers make decisions about the expenditure of time and money on a daily basis. In this work, we examine the stability of consumer valuations of time versus money across different choice occasions. By stability, we specifically refer to whether there is consistency (or transitivity) in expressed valuations of time versus money—transitivity is lacking when, for instance, one prefers A to B, and B to C, but then contradictorily prefers C to A.

In two experiments, we tested two competing hypotheses. On the one hand, prior research that has examined time-money differences (e.g. Okada and Hoch 2004, Zauberman and Lynch 2005) points toward relatively greater ambiguity in time valuation versus money valuation, which may in turn translate to less stability in expressed valuations of time. On the other hand, a separate stream

of research suggests that there could be less stability in expressed valuations of money, given that (1) affective processing of choice options has been found to generate greater preference consistency than more deliberate cognitive processing (Lee, Amir, and Ariely 2009); (2) money (vs. time) is likely to invoke more analytical as opposed to holistic thinking; and (3) time considerations naturally evokes more emotional responses than money considerations (Mogilner and Aaker 2009).

In experiment 1, 166 US student participants studied a set of nine different flight options for an upcoming international trip they had to make. They were subsequently shown all pair-wise combinations of these nine flight options (36 pairs) and asked to choose their preferred option within each pair. Participants were randomly assigned to one of three conditions: time, money, control. Across conditions, they were given different information about these flight options: in the control condition, each option was represented by both a service rating and an in-flight entertainment rating; additionally, the air fare of each option was also given in the money condition whereas the average one-way flight time was given in the time condition instead. The results revealed that participants in the money condition made significantly more intransitivity errors than both participants in the time condition and the control condition. Participants in the time condition, however, were equally consistent in their choices as those in the control condition. The results also indicated that the different degrees of choice consistency across conditions could not be sufficiently explained by any real or perceived differential difficulty of the choice task.

Experiment 2 conceptually replicated this basic result using a different experimental design and a different set of choice stimuli. Seventy-eight participants were asked to suppose that they had to purchase a photo essay software package for an important project. They were first shown a set of nine different software options represented by four attributes (software features, software quality, set-up time, and price) and then given all binary combinations of these nine software options (36 pairs) and asked to choose their preferred option within each pair. Participants were randomly assigned to one of three conditions: time, money, or control. Unlike experiment 1, participants were shown all four attributes, but which attribute values differed across the product options depended on the condition to which they were assigned: in the control condition, only features rating (1-5) and quality rating (1-5) differed across options while the set-up time and the price of the options were held constant; in the money condition, features rating, quality rating, and price varied across options while set-up time was held constant; in the time condition, features rating, quality rating, and set-up time varied across options while price was held constant. As such, different attributes were made relatively more salient to participants across conditions, hence inducing different degrees of consideration across attributes. To ensure similar magnitudes of attribute values for time and price, we used an implied conversion rate of 1 additional minute of set-up time for \$1 of price reduction.

Again, the results demonstrated that participants in the money condition made significantly more transitivity violations than those in the control condition and those in the time condition. Additional data indicated that participants did not perceive any differences in the variability of the given product options across conditions.

Together, these results provide convergent evidence that preferences based on time are more consistent than preferences based on money. We believe that our research provides a unique test of two competing processes underlying time versus money considerations. Furthermore, it furthers our understanding of the relationship between mental representation of outcomes and type of information processing (affective versus deliberative), as well as how



consumers form preferences based on two fundamental economic resources.

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