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The Stingy Hour: How Accounting for Time Affects Volunteering

Sanford E. DeVoe¹ and Jeffrey Pfeffer²

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Abstract

These studies examined how the practice of accounting for one's time—so that work can be billed or charged to specific clients or projects—affects the decision to allocate time to volunteer activities. Using longitudinal data collected from law students transitioning to their first jobs, Study 1 showed that exposure to billing time diminished individuals' willingness to volunteer, even after controlling for attitudes about volunteering held before entering the workforce as well as the individual's specific opportunity costs of volunteering time. Studies 2–5 experimentally manipulated billing time and confirmed its causal effect on individuals' willingness to volunteer and actual volunteering behavior. Study 5 showed that the effect of exposure to billing time on volunteering occurred above and beyond any effects on general self-efficacy or self-determination. Individual differences moderated the effects of billing, such that people who did not value money as much were less affected.

Keywords

billable hours, self-determination theory, time, money, volunteering

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With the growing pervasiveness of computer technology in the workplace, monitoring activities by, among other things, having individuals bill or account for their time on some form of “timesheet” has become easier and more pervasive (Kaveny, 2001). It is not just accountants, lawyers, consultants, and, in some instances, doctors who have to account for how they spend their time at work. At a major U.S. business school, clerical staff members fill out timesheets so their work output can be measured and the costs of their time assigned to various kinds of tasks (such as teaching or research) for budgeting purposes.

Although accounting for time on some form of timesheet is neither unusual nor new in the workplace, there has been little research on its effects. In the series of studies reported here, we argue that having to account for one's time changes how people think about their time and that the resulting decision calculus affects their choices in other life domains. As such, we consider how the practice of accounting for time use on a timesheet (hereafter referred to as “billing time” for parsimony) may have spillover effects on decisions about time use even when individuals are not billing their time and they are making decisions about personal time outside of an organizational work context. We test whether billing time, which makes the connection between time and money salient, renders the decision rule of not working without compensation a more salient and accessible heuristic for making decisions about time use.

Background and Hypotheses

The dominant perspective for understanding how any form of monitoring influences decisions about spending time is intrinsic motivation. Classic studies have shown that when intrinsically interesting tasks are done while people are subject to surveillance, the likelihood that individuals will subsequently engage in these tasks when surveillance is removed diminishes (Lepper & Greene, 1975). Although several perspectives have provided strictly attributional explanations for these undermining effects (e.g., Lepper, Greene, & Nisbett, 1973), the dominant theoretical account for understanding the effects of surveillance is cognitive evaluation theory, which is a subtheory of self-determination theory that addresses the cognitive processes that affect human motivation (Deci & Ryan, 1985). Cognitive evaluation theory argues that rewards and other extrinsic factors influence intrinsic motivation through feelings of competence and autonomy.

¹University of Toronto, Toronto, Ontario, Canada

²Stanford University, Stanford, California, USA

Corresponding Author:

Sanford E. DeVoe, Rotman School of Management, University of Toronto,
105 St. George Street, Toronto, Ontario M5S 3E6, Canada
Email: Sanford.DeVoe@rotman.utoronto.ca

We propose a complementary but nevertheless distinct mechanism for understanding the effects of surveillance (or, for that matter, payment) on *unrelated* tasks. We build on an extensive body of literature that shows that frequent exposure to environmental cues can influence social behavior (e.g., Bargh, 2006; Berger & Fitzsimons, 2008). Many things can be primed, such as goals, motivations, mind-sets, and cognitive procedures. In this vein, the mechanism we propose focuses on how organizational practices such as billing time influence how people *learn* to make decisions about time use, learning that may generalize to other situations. Here we draw on the procedural priming literature that describes a process through which frequent or recent use of certain cognitive procedures increases the propensity that those same procedures will be applied on subsequent unrelated tasks (Higgins, 1989; E. R. Smith, 1994).

Thus, exposure to billing time is conceptualized as increasing the procedural accessibility of particular decision logics, which individuals are subsequently more likely to use as a default heuristic in their decisions about time use. We focus on the salience of decision rules about time use that are generated and made salient in one domain and then get applied in another. In our studies we demonstrate the plausibility of this account and how it is complementary to intrinsic motivation.

The reason we might expect a spillover effect independent of the effects of intrinsic motivation is that billing one's time affects the salience of various decision logics for allocating time. For instance, Evans, Kunda, and Barley (2004) found that technical contractors who billed their time became economic evaluators of time—making decisions about time almost solely based on economic criteria instead of using other factors such as personal satisfaction or social obligations. In an analysis of billing time among lawyers, Kaveny (2001) argued that the billable hours mentality made it difficult to grasp a noncommodified understanding of the meaning of time. As a result of how lawyers account for time at work, they “may find themselves increasingly alienated from events in their lives that draw upon a different . . . understanding of time, such as family birthdays, holidays, and volunteer work” (Kaveny, 2001, p. 175). Yakura (2001), studying information technology consultants, found that routine billing practices contributed to a taken-for-granted equivalence between time and money.

The insights of Kaveny (2001) and Yakura (2001) are theoretically interesting because they suggest that having individuals bill their time can change how those individuals construe time and that this altered construal may spill over into how individuals make decisions about time in other, nonwork contexts. To develop the theoretical foundation for this line of argument, we next review the decision-making literature on the cuing of different decision rules.

Market Pricing as a Decision Logic for Time Allocation

In identifying the decision rules that billing time is likely to make salient, Fiske's (1992) theory of relational models is a helpful framework as it distinguishes market-pricing allocation logics from other allocation rules such as cooperation, hierarchy, and tit-for-tat. Whereas the models operating in social markets flow naturally from different types of social relationships, the focus on precise ratios of value is uniquely associated with a market-pricing allocation logic, which underlies capitalism and monetary transactions (McGraw & Tetlock, 2005).

Having individuals monitor their activities so they can bill their time is likely to make market pricing salient because of the accounting using precise units and the relation of these units to economic value. Experimental studies by Heyman and Ariely (2004) showed that when individuals are paid for their labor, a market-pricing decision logic is invoked and individuals adjusted their effort in direct relation to the amount of compensation they received for the activity. However, when individuals were asked to provide labor in exchange either for no money or for nonmonetary gifts, social market logics were invoked where individuals' efforts were independent of what they received in return. Importantly, Heyman and Ariely's findings imply that if a market-pricing decision logic is invoked around the resource of time, people will put forth less effort or spend less time when there is no direct compensation for their work. Indeed, within a market-pricing decision logic, an individual should be unwilling to give up time when there is no remuneration offered. Thus, we hypothesized when a market-pricing decision logic for time is made salient by billing or otherwise accounting for time, individuals should be less willing to volunteer their time.

Volunteerism

Understanding why and under what conditions people spend time on unpaid activities that benefit others (volunteering) is a recurring interest for personality and social psychologists. One line of research has focused the measurement of a prosocial personality and its relationship to volunteerism (Penner & Finkelstein, 1998). Similarly, Clary et al. (1998) have examined the different functional motives of volunteers. Additionally, Stukas, Snyder, and Clary (1999) found that when volunteer activities were mandated, individuals who felt external pressure to do the volunteering had lower intentions to volunteer in the future. Consistent with this finding, external influences, such as financial rewards, have generally been shown to undermine volunteering. For example, Batson, Coke, Jasnosi, and Hanson (1978) showed that people who were paid to help an experimenter code data judged themselves to be less altruistic than people who were

not paid for helping or who did not help. Upton (1974) demonstrated that committed blood donors who received rewards were subsequently less likely to donate compared to committed donors who were not offered a reward.

Although the effects of external forces on volunteering fit nicely within cognitive evaluation theory, the complementary mechanism we propose for how billing affects volunteering is distinct. First, we examine how billing may influence behavior on subsequent tasks that are completely unrelated and performed in different contexts. In fact, because behavior on subsequent, unrelated tasks is distinctly different from the situation of surveillance or payment, the self-perception of motivation and the enjoyment of the task should not be influenced. Furthermore, we demonstrate that although billing directly affects attitudes and behavior of volunteering, it does not influence intrinsic motivation for a volunteer task (Study 4) or the general self-efficacy or self-determination experienced after billing time (Study 5). Finally, we find that billing does not affect individuals who place relatively little importance on money.

Study 1

A first logical test of our hypothesis is that we should see willingness to volunteer change over time as individuals enter into jobs where they are exposed to the practice of billing time. Of course, people are not randomly assigned to jobs but instead self-select into positions that vary in whether billing time is required. We therefore designed a longitudinal study that first permitted us to measure a number of individual characteristics, including people's initial willingness to volunteer, and then followed up once the participants had begun work to see if exposure to billing time subsequently diminished their willingness to volunteer.

Because volunteerism is a prosocial activity, we wanted to observe whether billing time affects decisions only about time use or diminishes a person's overall altruism. Therefore, we also had participants make choices that pitted volunteering time against donating money.

The study sought to control for occupational differences by examining exposure to billing time within a single occupation where the practice is widespread: law. Prior work within self-determination theory has examined the influence of law education on aspirations and well-being (Sheldon & Krieger, 2004) but has not examined lawyers after graduation. To eliminate the effects of differential retention or attrition from jobs that require billing time, we studied law students in their first job immediately after graduation, in the period just after they had started work.

It is, of course, possible that individuals who are less interested in volunteering and who already think of time more like money systematically select into jobs that required billing time. Therefore, addressing possible self-selection effects of law students choosing different jobs based on their

willingness to volunteer was important for our analyses. If billing time diminishes lawyers' willingness to volunteer, we predicted that holding constant individual differences in willingness to volunteer before their work exposure, lawyers who bill their time should still be less willing to volunteer compared with those who do not bill their time.

To control as much as possible for other factors, we took advantage of a relatively homogenous sample population: graduating students from a small elite university law school. By sampling students from the same law school, we held constant their educational prestige and status. Because within the profession of law female lawyers have been shown to hold more interest in volunteer work (Rhode, 2005, p. 232), we controlled for gender in our analysis. We also controlled for individuals' estimated yearly income and average number of hours worked per week.

Method

Graduating students from an elite American university law school were recruited via e-mail to participate in an exit survey about the transition from school to work. One week before graduation ceremonies (Time 1), all graduating law students who reported an employer and city location in a graduate employment report received an e-mail with a link to our survey Web site. Participants responding at Time 1 received a follow-up e-mail for the survey at Time 2, which was 5 months later. At the first assessment, 47 participants out of 112 contacted responded (42% response rate), and of those participants, 66% responded to the second survey. In exchange for completing the surveys, participants received a \$5 gift certificate to an online retailer at Time 1 and a \$10 gift certificate to an online retailer at Time 2.

Measures

Willingness to volunteer. Participants responded to the five survey questions used previously by DeVoe and Pfeffer (2007b) designed to tap willingness to volunteer (e.g., "I am willing to volunteer for an organization I care about without financial compensation for me"; "Even for an organization I care about, I am unwilling to work without getting paid"; "I'm unlikely to undertake any type of work without being paid"; "Volunteering is a worthwhile use of my time even if I do not get paid"; and "Without some financial compensation, it is not worth doing volunteer work") on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. Relevant items were reverse scored so that higher values indicated a greater willingness to volunteer. The scale exhibited good reliability (Time 1 Cronbach's $\alpha = .86$; Time 2 Cronbach's $\alpha = .88$).

Giving time versus money. To assess preferences for volunteering time relative to donating money, participants responded to a set of scenarios followed by questions that asked participants to make trade-offs between giving time

Table 1. Means, Standard Deviations, and Intercorrelations of Variables in Study I

Variable	M	SD	1	2	3	4	5	6	7	8
1. Billing time T2 (1 = bill)	0.65	0.49	—							
2. Gender T1 (1 = female)	0.44	0.50	.06	—						
3. Estimated yearly salary T2	99,572	46,630	.79**	-.03	—					
4. No. of hours worked per week T2	54.33	17.94	-.15	-.43*	-.03	—				
5. Willingness to volunteer T1	6.08	1.09	.00	-.21	.03	.17	—			
6. Willingness to volunteer T2	5.99	1.22	-.12	-.04	.00	.16	.87**	—		
7. Pay for painting T2 (1 = outsource)	0.68	0.48	-.22	.29	-.16	.02	.27	.27	—	
8. Donate to charity T2 (1 = outsource)	0.48	0.51	.31†	.19	.04	-.19	-.24	-.31	.12	—

T1 = measured before exposure to work; T2 = measured after exposure to work.

† $p \leq .10$. * $p \leq .05$. ** $p \leq .01$.

and giving money. These procedures were developed by Reed, Aquino, and Levy (2007) to measure differences in choices about giving time and money. Specifically, participants were asked “1. How much free leisure time do you usually have per week?” and “2. How much money is this free time worth to you? In other words, how much would you be willing to pay to keep this free time?” Then participants were asked which would they rather do: “Spend your leisure time one week (the number of hours that you wrote in response to question 1) painting rooms in your house that need to be re-painted” or “Pay someone to paint rooms in your house that need to be re-painted (at the dollar amount that you wrote in response to question 2).” Participants were also asked that if they decided to give to their favorite charity, which would they rather do: “Volunteer your leisure time one week to helping out at the organization (the number of hours that you wrote in response to question 1)” or “Donate an equivalent amount of money to the organization (the amount of money that you wrote in response to question 2).”

Participants’ responses to the painting and charity questions were coded 0 for giving time and 1 for giving money. Giving money rather than time can be taken as a measure of people’s interest in “outsourcing” the performance of volunteer activities. These items allow us to control for subjective perceptions of opportunity costs. This is a critical factor because we argue that it is the salience of a market-pricing decision logic for time promoted by billing that diminishes lawyers’ willingness to volunteer above and beyond potential differences in the subjective economic value of time. Thus, these items allow us to detect effects that are distinct from those associated with individuals’ subjective calculation of their monetary opportunity costs.

Billing time. In the Time 2 assessment, participants responded to the question: “Are you required to account for how you spend your time using a timesheet or similar reporting form?” The 64.5% of participants who answered *yes* to this question were coded as 1 and the participants who answered *no* to this question were coded as 0.

Demographic and other control variables. At Time 1, participants provided their gender (1 = *female*, 0 = *male*). At the

Time 2 assessment, participants provided their estimated yearly income (“What is your best estimate of how much you are going to earn in your first twelve months of working before taxes or other deductions?”) and the average number of hours they worked per week (“How many hours do you usually work per week?”). The estimated earnings values were divided by \$10,000.¹

Results

In the analyses that follow, we hold constant individuals’ gender, estimated yearly income (Time 2), average hours worked per week (Time 2), and their willingness to volunteer before their starting work (Time 1). We consider the effect of exposure to billing time on two outcome variables related to volunteering: (a) willingness to volunteer at Time 2 and (b) the preference for outsourcing volunteer activities by giving money rather than time at Time 2. Table 1 reports the means, standard deviations, and intercorrelations among the study variables.

Willingness to volunteer. As an initial test of whether there was a significant change in participants’ willingness to volunteer between Time 1 and Time 2, we conducted a repeated measures ANCOVA with the within-subject factor of willingness to volunteer. The data showed some change in willingness to volunteer between the two periods, with a marginally significant main effect of factor, Wilks’s $\lambda = .46$, $F(1, 24) = 3.65$, $p < .07$. More important for testing our predictions about the effects of billing time, there was a statistically significant Factor \times Billing Time interaction, Wilks’s $\lambda = .85$, $F(1, 24) = 4.42$, $p < .05$.

We also modeled participants’ responses to the willingness to volunteer at Time 2 using ordinary least squares (OLS) regressions. OLS allowed us to directly observe the effect of prior willingness to volunteer at Time 1 in conjunction with the unique effect of exposure to billing time. These results are reported in Table 2. Model I includes the control variables as predictors and Model II enters the theoretically important independent variable of billing time. Adding the independent variable of billing time to the regression significantly

Table 2. Predicting Change in Willingness to Volunteer in Study 1

Predictor	Model I	Model II
Gender (1 = female)	.25*	.26*
Estimated yearly income	-.07	.14
Average number of hours worked per week	.10	.08
Willingness to volunteer (Time 1)	.94**	.94**
Billing time (1 = bill time)	—	-.26*
Degrees of freedom error	24	23
R ²	.84**	.87**
ΔR ²		.03*

Values indicate standardized beta coefficients from ordinary least squares regressions. Positive values indicate an increased willingness to volunteer in Time 2 after exposure to work.

* $p \leq .05$. ** $p \leq .01$.

increased the variance explained (R^2 increased from .84 to .87), $F(1, 23) = 4.28, p = .05$. The results show that even holding constant people's willingness to volunteer when they were still in law school, which, given the size of the coefficient, is apparently a reasonably stable individual difference that could be an indicator of people's general public spiritedness and an important proxy for various unmeasured individual differences that relate to volunteering, respondents who billed their time were significantly less willing to volunteer their time, $\beta = -.26, t(23) = -2.07, p = .05$.

Giving time versus money. Among the participants who decided to pay someone to paint rooms in their house, lawyers exposed to billing time were more likely to make the same decision to outsource their volunteering, in that they were more interested in giving money versus time (75%) than were their nonbilling time counterparts (25%), $\chi^2(1, N = 20) = 5.74, p = .01$. This result is consistent with the idea that lawyers exposed to billing time treated the decision to outsource any activity as similar regardless of whether the activity is within a nonmoral or moral domain. Because the monetary returns of the two decisions were made equivalent through the construction of the trade-offs, there appeared to be greater consistency in how lawyers exposed to billing time responded to the spending time versus money trade-offs across different domains of activity.

To test whether there was a diminished likelihood of donating time to charity holding constant individual differences in willingness to volunteer before exposure to work and the individual's subjective opportunity costs, we conducted binary logistic regressions. The binary logistic regression allowed us to conduct an analysis similar to the OLS analysis we conducted on the willingness to volunteer measure but for a dichotomous outcome variable. The results of the binary logistic regressions are reported in Table 3. These analyses model participants' willingness to give time as opposed to money to charity, holding constant individuals' gender, estimated yearly income, average hours worked per

Table 3. Predicting Donation of Time Versus Money in Study 1

Predictor	Model I		Model II	
Gender (1 = female)	-0.17	(0.95)	-2.60	(2.09)
Estimated yearly income	-0.01	(0.10)	-2.12 [†]	(1.09)
Average number of hours worked per week	-0.03	(0.03)	-0.07	(0.05)
Willingness to volunteer (Time 1)	-0.67	(0.44)	-0.93	(0.63)
Dummy for preference for outsourcing painting (1 = pay to outsource painting)	0.55	(0.99)	2.60	(1.99)
Billing time (1 = bill)	—		20.08*	(9.95)
Constant	5.46*	(3.75)	1.42 [†]	(2.04)
-2 log likelihood	35.12		21.38	
Improvement in -2 log likelihood			13.74*	

Values indicate binary logistic coefficients and standard errors. Positive values indicate a preference to outsource volunteering.

[†] $p \leq .10$. * $p \leq .05$.

week, willingness to volunteer before exposure to work, and preference for outsourcing the activity of painting by paying someone to do that task. Model I includes the control variables and Model II enters the theoretically important independent variable of billing time. Adding the independent variable of billing time to the model significantly improved its fit, $-2(\log \text{likelihood } 1 - \log \text{likelihood } 2) = 13.74, p < .001$. The results in Model II show that holding constant willingness to volunteer at Time 1, respondents who billed their time were significantly more interested in donating money rather than time to charity, $B = 20.08, SE = 9.95, \text{Wald } \chi_1 = 4.08, p = .04$.

Discussion

Using a longitudinal design, we surveyed 3rd-year law students just before graduation and then again after they had begun working. Because we studied students in their first months on their first job after graduation, we minimized the issue of differential retention of participants based on individual differences in willingness to volunteer. A crucial part of our design was the ability to hold constant potential selection effects and observed individual differences by controlling for individuals' attitudes toward volunteering when they were still in school.

Results revealed that holding constant individual differences in willingness to volunteer before graduation, respondents exposed to billing time were both less willing to volunteer and more likely to donate money to charity in lieu of donating their time. Importantly, the impact of billing time was shown both for attitudes toward volunteering and for behavioral intentions to give time to charity. The latter item

revealed a diminished preference to spend time volunteering above and beyond differences in the subjective economic value of time. Moreover, we found that people exposed to billing time tended to view their decision to outsource volunteering as more similar to the decision to outsource a nonmoral activity, painting rooms. This finding is consistent with the idea that billing time promotes greater procedural accessibility of a market-pricing decision logic of time use regardless of the domain of activity.

Despite the strengths of the research design, there are three important limitations to these data. First, the type and size of the sample may limit the generalizability of the findings. It is possible that these results may not replicate among students graduating from a lower status law school where individuals earn less. Not only will it be important for future research to replicate these findings with a larger and more diverse sample of graduating law students but also to replicate these findings with populations other than recent graduates and in occupations other than law.

Second, our longitudinal design was limited to assessments at two periods and the covariates collected at these time points. Although all of the participants in our sample were matriculating to highly reputable jobs in the field of law, we did not measure variations in the status of the jobs or job descriptions. Explicitly controlling for these differences would allow for a more precise assessment of exposure to billing. We were able to control for potential selection effects based on individuals' willingness to volunteer, but the data from only two periods do not permit us to rule out the possibility of individuals self-selecting into jobs where billable hours was present. For self-selection to explain this study's results, however, it must be that there is some other unmeasured orientation or individual difference that is uncorrelated with the willingness to volunteer measure and that provides an alternative account for how billing affects volunteering. Finally, the causal role of billing remains an open question. To directly address the issue of causality, in the subsequent studies we randomly assigned participants to a work task where they did or did not bill their time.

Study 2

Although the external validity of Study 1 is important, the only way to address the issue of causality and rule out alternatives is to directly manipulate exposure to billing. Random assignment ensures that other factors do not differ across experimental conditions and strengthens the likelihood that observed differences in attitudes and behavior come from the activity of billing time.

We had participants engage in a work activity where we could randomly assign whether they billed their time during the task. The laboratory setting allowed us to control for the amount of time worked and the content of the work, and to create a context where there was no direct financial

remuneration for the work, nor any sort of contingent compensation based on how long participants worked.

Within the profession of law, billing time in one-tenth of an hour (6 min) increments is generally what is done (Richmond, 1996; Tolk, 2005). Therefore, we manipulated exposure to billing time by randomly assigning participants to do a task where they billed their time every 6 min or, in a control condition, not at all. Based on the results of Study 1, we hypothesized that participants who billed their time during this task would be less willing to volunteer and have diminished intentions to volunteer as compared to participants who did not bill their time.

Method

Participants. Fifty Canadian undergraduate commerce students were recruited to participate in a 2-hr session in exchange for course credit.

Task and procedure. Participants engaged in an expanded version of a consulting task developed by Lee and Tiedens (2001), where they made mock personnel decisions for a fictitious company and then communicated these decisions by drafting computer-typed memos to all the people involved. The content of the task was split between the two distinct sub-tasks of "personnel decisions" (i.e., whom to hire and transfer) and "memo writing." These personnel decisions were made across three regional offices of the same fictitious company (Chicago, New York, and Los Angeles). All participants were run at separate computer workstations. To aid participants in the task, several applications on the computer were opened: A Word document with stationery headers for typing the task memos, the calculator application in Microsoft Office accessories, and a digital clock (www.onlineclock.org). Participants were told they were to spend 1 hr on this task and the remaining part of the study would be spent filling out several unrelated questionnaires.

Manipulation. Participants were randomly assigned to either a nonbilling control condition ($n = 27$) or a billing time treatment condition ($n = 23$). Participants engaged in nearly the identical consulting activity in both conditions, except participants in the billing time condition kept a log cataloging "specifically what you have done and how much each office's budget should be charged for that time every six minutes." The participants in the billing time condition filled out a log with four columns: time interval that segmented time into 6-min increments, description of work that is being billed (personnel decisions or memo writing), time spent for each office (Chicago, New York, or Los Angeles office), and amount charged to each office. On the top of the billing sheet participants were told to charge \$0.25 for each minute. At the completion of the task, participants filled out a "Billing Summary" sheet where they tallied the total time billed to each office, total money charged to each office, and the total time billed/money charged for the session.

Table 4. Means, Standard Deviations, and Intercorrelations in Study 2

Variable	M	SD	1	2	3	4	5	6	7
1. Condition (1 = bill)	0.46	0.50	—						
2. Paid work (hr)	39.91	13.55	.10	—					
3. Household/family care (hr)	11.21	6.99	-.03	.04	—				
4. Personal time (hr)	50.30	10.01	.03	-.23	.01	—			
5. Leisure (hr)	39.36	15.72	-.23	-.32*	-.08	.05	—		
6. Volunteer work (hr)	1.38	2.33	-.27*	-.13	.17	-.09	.31*	—	
7. Willingness to volunteer	4.99	1.21	-.34*	-.03	.14	-.05	.03	.44**	—

* $p \leq .05$. ** $p \leq .01$.

Dependent Variables

Future time allocations. Immediately after the consulting task, participants were told: "We're interested in how you plan to spend your time the year after you graduate from university. Please indicate the approximate number of hours you expect to spend in a typical week the year after you graduate on each of the activities below." Participants listed the number of hours they expected to spend on the following list of activities: "Paid work," "Watching TV/surfing Internet," "Sports and exercise," "Clubs," "Socializing with friends/family," "Volunteer work," "Sleeping," "Cooking," "Cleaning," and "Other major category: Specify _____". Participants' anticipated time uses were combined into Robinson and Godbey's (1999) time use categories of *paid work*, *household/family care* (items "Cooking" and "Cleaning" combined), *personal time* ("Sleeping"), *leisure* ("Watching TV/surfing Internet," "Sports and exercise," "Clubs," "Socializing with friends/family"), and *volunteer work*.

Willingness to volunteer. After completing the projected time diary, participants responded to the willingness to volunteer measure used in Study 1 on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. Relevant items were reverse scored so that higher values indicated a greater willingness to volunteer. The scale once again had good reliability (Cronbach's $\alpha = .76$).

Results and Discussion

The means, standard deviations, and intercorrelations of all the study variables are reported in Table 4. Among the five time allocation categories, significant differences across experimental condition were found *only* for future time allocations to volunteer work. Participants in the billing time condition anticipated spending fewer hours per week on volunteering ($M = .70$, $SD = 1.26$) than those in the control condition ($M = 1.96$, $SD = 2.85$), $t(49) = -1.97$, $p \leq .05$. Additionally, participants in the billing time condition reported that they were less willing to volunteer ($M = 4.55$, $SD = 1.17$) than those in the control condition ($M = 5.36$, $SD = 1.13$), $t(48) = 2.51$, $p = .02$.

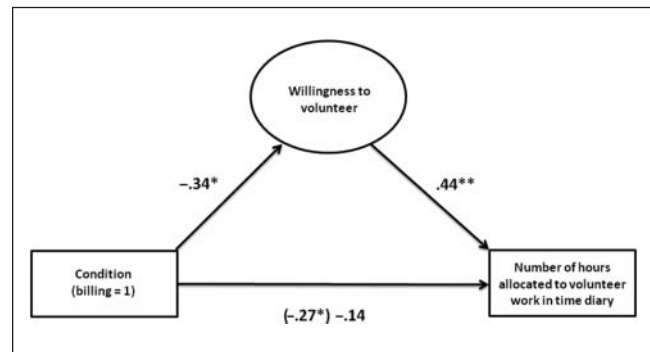


Figure 1. Mediation of experimental exposure to billing time on anticipated time allocations to volunteer work in Study 4
* $p \leq .05$. ** $p \leq .01$.

To test whether participants' willingness to volunteer had a mediating role in explaining participants' future time allocation to volunteering, we conducted regression analyses testing for mediation (Baron & Kenny, 1986). Future time allocation to volunteer work was first regressed on experimental condition and then on the willingness to volunteer measure. The standardized regression coefficient paths for the mediational analysis are reported in Figure 1. The effect of billing time was initially significant, $\beta = -.27$, $t(49) = -1.97$, $p \leq .05$, and became nonsignificant when willingness to volunteer was entered, $\beta = -.14$, $t(47) = -.14$, ns . The effect of willingness to volunteer was significant, $\beta = .40$, $t(47) = 2.87$, $p = .006$. This pattern of statistical results indicates that the effect of experimental condition on future time allocations was fully mediated by its effect on willingness to volunteer ($z = -2.08$, $p = .04$).

The analyses revealed that the affect of billing time on time allocations could be entirely explained by individuals' willingness to work without pay. Having now demonstrated that billing affects attitudes and behavioral intentions to volunteer, the subsequent experiments explored the effects of billing on actual volunteering behavior.

Study 3

In our first effort to observe the affect of billing on actual volunteering experimentally, we developed an activity that was likely to show that the impact of billing was distinct from the process of cognitive evaluation theory. Specifically, we used a volunteer activity that was unrelated to the task people billed their time for and the volunteer activity was one that lacked intrinsic motivation.

Method

Participants. A total of 28 Canadian undergraduate commerce students were run individually in two contiguous rooms for sessions lasting approximately 1 hr and each received course credit for their participation in the study.

Task and manipulation. Participants engaged in the identical consulting task used in Study 2 ($n = 13$ in billing, $n = 15$ in control) but only engaged in the consulting task for 35 min instead of a full hour. The experimenter instructed participants that they would be reminded when there was 5 min remaining for them to work on the task. After 35 min had elapsed, the experimenter told participants that the consulting task was over and not to worry if they had not finished. Then, the experimenter instructed participants that there were 15 min remaining in the session and the final task was a one-page exit survey that would only take 1 or 2 min to complete. It was explained to each participant that the person in the other room was given an additional 15-min task to complete and that the exit survey had to be completed by both participants at the same time. The experimenter said, "That means that you have 15 minutes to do whatever you like: surf the Internet, check your email, take a nap, whatever you like."

The experimenter also gave participants the full name of a staff member of the school's Community Relations office who was responsible for sending out the school magazine to the general community. The experimenter explained that this staff member used the rooms they were currently in to do the mailings. Because the office was behind on the winter mailing and the rooms were being used during the entire day, the staff member had asked the experimenter to see if participants in the study would be able to help. The experimenter explicitly stated that this task was not part of the study and was completely voluntary. The experimenter instructed the participants about what was entailed in stuffing the envelopes and said: "If you are up for it, I have placed 10 magazines on your desk and there is a box on the ground next to you with more magazines." The experimenter again emphasized that this was entirely voluntary and returned exactly 15 min later to administer a one-page questionnaire.

Measures

Self-reported fatigue/surveillance. On a 1 (*strongly disagree*) to 7 (*strongly agree*) scale, participants rated how fatigued

they felt after the billing task ("The task I participated in today left me feeling very tired") and how monitored ("The task I participated in today made me feel like I was being monitored"). These are important measures to collect as an obvious alternative interpretation for the results is that billing or accounting for one's time creates a feeling of more surveillance or is more tiring.

Volunteering. Participants were asked to report how many of the 15 min they had spent on the envelope stuffing task ("How many of the 15 minutes after the Consulting Task did you spend stuffing envelopes?") and how many envelopes they stuffed ("How many of the envelopes were you able to stuff?"). After the participants left the session, the experimenter counted the actual number of envelopes stuffed during the session.

Results and Discussion

No differences were observed in participants' self-reports in either how fatigued, $t(26) = -.02$, *ns*, or how monitored, $t(26) = .25$, *ns*, they felt at the conclusion of the session. Thus, we were able to create two conditions that did *not* differ in the psychologically important dimensions of fatigue or perceived surveillance. Although billing time may be a form of organizational control, at least in this experimental context accounting for one's time spent on a timesheet did not cause the participants to feel as if they were under more surveillance.

Consistent with our predictions, participants in the billing time condition reported spending fewer minutes stuffing envelopes ($M = 4.73$, $SD = 4.99$) than participants in the control condition ($M = 9.13$, $SD = 4.57$), $t(26) = 2.44$, $p = .02$. Additionally, participants in the billing time condition reported stuffing fewer envelopes ($M = 12.69$, $SD = 10.43$) than did participants in the control condition ($M = 25.57$, $SD = 18.18$), $t(26) = 2.25$, $p = .03$. The number of envelopes actually stuffed by participants as counted by the experimenter was highly correlated with participants' self-reports ($r = .91$, $p < .001$). Participants in the billing condition actually stuffed fewer envelopes ($M = 12.46$, $SD = 10.16$) than did participants in the control condition ($M = 23.46$, $SD = 17.28$), $t(26) = 2.09$, $p = .05$. Across all three measures of volunteering, participants who billed their time using a timesheet spent less time on a volunteer task and *actually* did less volunteer work.

Because this task of stuffing envelopes was one where intrinsic motivation was likely to be minimal and was a task that people might expect to be financially compensated for doing, we also wanted to see whether we would get a similar effect on volunteering using a task that was more intrinsically motivating and where we could have all of the participants engage in the same prosocial activity before their decision to volunteer. Moreover, by having each participant engage in an intrinsically motivating activity after the task of billing, we could see whether exposure to billing

time affects volunteering by diminishing the intrinsic value experienced during participation in a prosocial activity or whether it affects only willingness to do work without compensation.

Study 4

In this study, we sought to distinguish between whether exposure to billing time influences participants' ability to enjoy prosocial activities or whether it primarily influences participants' decisions to volunteer their time. To accomplish this, we had all participants engage in the same prosocial activity of writing a letter to a sick child during a 10-min period after the same billing experimental treatment. Participants then responded to a standard intrinsic motivation scale for the prosocial activity and were provided with the opportunity to volunteer to do the prosocial activity after the study was over.

Method

Participants. A total of 28 Canadian undergraduate commerce students were run in group sessions lasting approximately 1 hr and each received course credit for their participation in the study.

Task and manipulation. The task paradigm was nearly identical to that employed in Study 3 ($n = 13$ control, $n = 15$ for billing), except for two differences. First, participants were run in group sessions of 3-8 within condition. Second, after the consulting task was completed, participants were told that there were 15 min remaining in the session. At that point, the experimenter handed out a sheet to all participants instructing them to use the next 10 min to experience a volunteer activity. The sheet instructed participants to open up their Web browser to the link http://www.makeachildsmile.org/featured_kids.shtml. This link instructed participants to click on one of three children featured during the current month on the "Make A Child Smile" Web page, read their story, and write them a card wishing them well. Upon completing the task, participants were provided with an envelope and appropriate postage to mail the letter themselves at the nearest post office.

Dependent Variables

Task interest/enjoyment. Participants responded to the interest/enjoyment subscale of the Intrinsic Motivation Inventory, which is considered a good self-report measure of intrinsic motivation (Ryan, Mims, & Koestner, 1983) and has been rigorously tested for its validity (e.g., McAuley, Duncan, & Tammen, 1987). The seven items comprising the subscale were modified slightly to fit the specific activity of writing the Make A Child Smile letter (e.g., "I enjoyed doing the Make A Child Smile activity very much") and were each rated on a 1 (*not at all true*) to 7 (*very true*) scale, with a

midpoint of 4 (*somewhat true*). Appropriate items were reverse scored and the subscale exhibited good reliability (Cronbach's $\alpha = .82$).

Volunteering. The experimenter left five additional Make A Child Smile biographies featured during the previous month on the Make A Child Smile Web site, and the biographies were each affixed to an appropriately addressed stamped envelope. Because the stamped envelopes already had the addresses printed on them, this ensured that they could not easily be used for any other purpose than the volunteer activity. The experimenter instructed participants to take as many of the five envelopes they wished if they wanted to write additional letters, but to leave them for others if they were not going to write any additional letters. After participants had left the session, the experimenter counted the number of envelopes each participant took. The number of envelopes taken was our behavioral measure of volunteering.

Results and Discussion

The average self-reported task interest/enjoyment of the prosocial letter writing task was, as expected, above the midpoint of the scale ($M = 5.23$, $SD = 1.16$), $t(25) = 5.42$, $p < .001$. Moreover, the self-reported task interest was significantly correlated with the number of letters participants took away from the experiment ($r = .60$, $p = .001$). But, and this is an important finding, no differences were observed across the two conditions in participants' task interest/enjoyment for the letter writing task, $t(24) = .69$, *ns*. This result means that any differences in volunteering behavior observed across the two conditions were not because the billing time condition somehow diminished the intrinsic pleasure in writing a note to a sick child.

As expected, we found that participants in the billing time condition took fewer envelopes away from the session ($M = 1.47$, $SD = 1.77$) than their counterparts in the control condition ($M = 3.39$, $SD = 2.18$), $t(26) = 2.57$, $p = .02$. Note that the difference is not only statistically significant, it is substantively important, with those in the billing time condition taking away fewer than half as many envelopes on average to write additional letters to sick children.

These results replicate the findings of Study 3 with a very different behavioral measure of volunteering where all participants engaged in a prosocial activity and experienced it as equally enjoyable. We found no evidence that exposure to billing time changed how participants psychologically experienced the prosocial activity but did see that they were less likely to take letters to write after the session.

Study 5

We have argued that billing makes a market-pricing decision logic for time use salient, which decreases people's willingness to engage in work without financial compensation. Studies 3 and 4 demonstrated that exposure to billing time

diminished volunteering during a subsequent free time session. Of course, it is possible that the practice of billing may influence volunteering through other psychological mechanisms. For instance, billing might cause individuals to feel less efficacious or experience less self-determination, and this in turn could lead to lower levels of volunteering. We have argued that the psychological process we have proposed is distinct from self-determination theory. To demonstrate the unique effect of billing more explicitly, we measured individuals' general self-efficacy and self-determination after exposure to experimental condition and subsequently used these variables as covariates in our analyses to determine the unique effect of billing on the amount of time spent volunteering.

Additionally, we wanted to verify that it was not something specific to the consulting control condition that promoted volunteering. For instance, it might be that having participants do a worklike task without payment would diminish the salience of a market-pricing decision logic for time. To have a better sense for whether the consulting control condition promoted volunteering or the billing condition diminished volunteering, we included a second control condition in this experiment where participants engaged in a task that was not a task associated with work (responding to personality questions). By including two control conditions, we had an alternative benchmark from which to compare volunteering that occurred within the billing condition.

Finally, to provide clearer evidence for a market-pricing decision logic mechanism, we tested whether individual differences in the personal value for money would moderate the effect of billing on the amount of time spent volunteering. We administered the Kasser and Ryan (1993) Aspiration Index, which elicits individuals' value for financial success relative to other nonmonetary values. Kasser and Ryan discussed the fact that financial success is an important aspiration in capitalist societies and those who aspire to financial wealth are more likely to focus on contingent, external goals unrelated to inherent needs and will ignore or be more distracted from intrinsically satisfying activities. Although cognitive evaluation theory does not make any explicit predictions with regard to how individual differences in aspirations for financial success might moderate intrinsic motivation, from our perspective the relative value an individual has for money is a theoretically important moderator for the salience of a market-pricing decision logic for allocating time. Even though billing is likely to make this logic salient, market-pricing decision logic is unlikely to influence as much the behavior of individuals who do not value money as highly.

Method

Participants. A total of 119 Canadian undergraduate commerce students were run in group sessions for approximately 1 hr. In exchange for participating in two parts of the study,

27 participants received course credit and 92 participants received \$10.

Task and manipulation. The task paradigm was nearly identical to that employed in Study 3, with two important differences. First, an additional control condition was added to the design. In this control condition, participants spent 35 min responding to 525 items drawn from different Big Five personality scales. Thus, participants in this study were randomly assigned to spend time engaging in the consulting task (where they either did or did not bill their time) or a nonconsulting control condition. Second, after 35 min participants were told: "We want to wipe the slate clean by giving you a 10-minute break before you respond to a brief 5-page questionnaire. You should spend the next 10 minutes in any way that you like." However, it was suggested to participants that they spend some time on the Web site of the charitable organization www.freerice.com. After 10 min, the experiment instructed the participants to stop what they were doing and complete a final questionnaire.

Dependent Variables

Aspiration Index. At least 1 week before the scheduled experiment, participants responded to an online questionnaire that was a prerequisite for sign-ups for the lab portion of the study. Participants responded to Kasser and Ryan's (1993) seven aspiration or life-goal categories (i.e., self-acceptance, affiliation, community feeling, physical fitness, social recognition, appealing appearance, and financial success). Alpha coefficients for the subscales ranged from .66 to .90. The average of the seven subscales was taken to compute the overall importance regardless of content, and the relative importance of financial success was computed by subtracting the overall importance score from the financial success subscale. This results in scores that are relative to the importance of the other nonfinancial aspirations. After responding, participants provided their e-mail address so that their response could be matched to data in the lab session. Participants were not required to provide this information, but 110 respondents did.

Volunteering. During the 10-min free period, it was suggested to participants that they could spend time on the Web site of the charitable organization www.freerice.com. This is a nonprofit Web site run jointly by the United Nations World Food Program and the Berkman Center for Internet & Society at Harvard University. Its stated goals are to provide an education to everyone for free and help end world hunger by providing rice to hungry people for free. On the Web site, participants can answer multiple-choice educational questions, and for each question that is answered correctly the Web site donates 10 grains of rice. Immediately after the 10 min had elapsed, participants filled out a brief time diary indicating the number of minutes they spent on any of the following activities: "www.freerice.com," "e-mail for school work," "e-mail for friends/family," "surfing the web for class," "surfing

Table 5. Mean Differences as a Function of Condition in Study 5

Dependent variable	Personality control (n = 44)		Consulting control (n = 35)		Billing treatment (n = 40)	
10-min time diary						
Freerice.com ^a	8.06 _a	(2.90)	8.11 _a	(2.94)	5.48 _b	(3.89)
E-mail for school	0.94 _a	(2.07)	0.30 _a	(0.82)	0.85 _a	(1.63)
E-mail for friends/family	0.14 _a	(0.55)	0.18 _a	(0.69)	0.42 _a	(1.17)
Surfing the Web for class	0.00 _a	(0.00)	0.20 _a	(0.80)	0.28 _a	(0.93)
Surfing the Web for fun	0.49 _a	(1.56)	0.66 _{ab}	(2.06)	1.80 _b	(3.01)
Doing school work	0.00 _a	(0.00)	0.00 _a	(0.00)	0.18 _a	(0.78)
Napping/doing nothing	0.20 _a	(0.53)	0.14 _a	(0.55)	0.50 _a	(1.45)
Other	0.17 _a	(0.86)	0.41 _a	(1.02)	0.48 _a	(2.00)
Self-determination						
Full scale	3.65 _a	(0.52)	3.39 _a	(0.75)	3.68 _a	(0.69)
Subscale perceived choice	3.35 _a	(0.75)	3.16 _a	(0.83)	3.53 _a	(0.81)
Subscale self-awareness	3.94 _a	(0.61)	3.60 _a	(0.82)	3.82 _a	(0.73)
Self-efficacy	3.02 _a	(0.36)	3.01 _a	(0.50)	2.97 _a	(0.35)

Means not sharing a subscript differ at the .05 level according to Tukey's honestly significant difference post hoc test.

^aFreerice.com was a volunteer activity suggested to participants.

the web for fun," "school work (not on computer)," "spacing out/napping," and "other, specify." Participants circled the number of minutes spent on each of these activities on a 0 (*none*) to 10 (*all*) scale with 5 (*half*) as the midpoint. The outcome variable of interest was the number of minutes spent volunteering on www.freerice.com.

General self-efficacy. After the time diary, participants responded to the 10-item English version of General Self-Efficacy developed by Schwarzer and Jerusalem (1995). Each item refers to successful coping and implies an internal-stable attribution of success (e.g., "I can always manage to solve difficult problems if I try hard enough") and is rated on a 1 (*not at all true*) to 4 (*exactly true*) scale. The scale exhibited good reliability (Cronbach's $\alpha = .83$).

Self-determination. Participants also responded to Sheldon and Deci's (1996) 10-item Self-Determination Scale. For each item, participants indicated which of two statements was more true for them (e.g., "A. I sometimes feel that it's not really me choosing the things I do" and "B. I always feel like I choose the things I do"). Participants responded on a 1 (*only A feels true*) to 5 (*only B feels true*) scale. The measure has been shown to have good reliability and validity (Sheldon, Ryan, & Reis, 1996). After recoding reverse items, participants' responses were summed to form an overall self-determination index (Cronbach's $\alpha = .83$). We also examined the two 5-item subscales for awareness of feelings and sense of self (Cronbach's $\alpha = .82$), and feeling of choice with respect to behavior (Cronbach's $\alpha = .69$).

Results and Discussion

As an initial examination of the data, we conducted a one-way ANOVA on all of the possible outcome measures. Table 5

reports the means and standard deviations across conditions with Tukey's honestly significant difference post hoc tests. We found a strong replication of the previous studies, with individuals in the billing condition spending less time volunteering than their counterparts in either the consulting control condition or the questionnaire control condition. Interestingly, no differences emerged in participants' responses to general self-efficacy or self-determination. To firmly establish the differences in volunteering between the control conditions and the billing condition, we compared these two conditions directly in an ANCOVA where we controlled for whether the participant did the study for monetary payment or for course credit, general self-efficacy, and self-determination. Participants in the control conditions spent more time volunteering ($M_{\text{adjusted}} = 8.09$, $SE = .37$) than did participants in the billing condition ($M_{\text{adjusted}} = 5.43$, $SE = .53$), $F(1, 113) = 16.38$, $p < .001$.

To test whether the differences in the amount of time spent volunteering between the control conditions and the billing condition varied as a function of individual differences in the personal value for money, we conducted a multiple regression where we interacted a dummy variable for exposure to billing (1 = *billing*) and the relative importance placed on money based on scores of Kasser and Ryan's (1993) Aspiration Index measured at least 1 week before the laboratory session. We also included a dummy variable for participants' compensation (1 = *paid with credit*) and covariates for post-treatment-measured variables of general self-efficacy and self-determination.

Results showed a main effect for condition, $\beta = -.34$, $t(101) = -3.66$, $p < .001$, and no main effect of personal value for money, $\beta = .05$, $t(101) = .46$, *ns*. There was a significant Condition \times Personal Value for Money interaction, $\beta = -.20$,

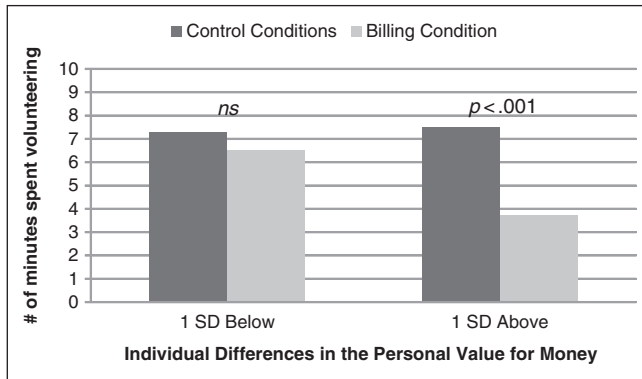


Figure 2. The effect of billing on the number of minutes spent volunteering (out of 10 possible minutes) at 1 SD above and below the mean of individuals' personal value for money measured 1 week before the experimental treatments

$t(101) = -2.13, p < .05$. Figure 2 decomposes this interaction at 1 SD above and below the mean of individuals' financial aspirations. Simple slope analyses revealed that for individuals who did not personally value money (1 SD below the mean), there were no differences across conditions, $t(101) = -.71, ns$. However, for individuals who did personally value money (1 SD above the mean), there were significant differences across conditions, $t(101) = -3.84, p < .0001$.

Thus, the salience of a market-pricing decision rule for time did not influence individuals who do not value the outcome of money. Not only does this study help elucidate the mechanism as complementary to but distinct from self-determination theory, but it also identifies the individuals who are more susceptible to the spillover effects of exposure to billing—those who value money more highly.

General Discussion

We tested the hypothesis that a market-pricing decision logic for time could be made salient by billing time and cause individuals to be less willing to volunteer their time. Study 1 demonstrated the external validity of this relationship by examining lawyers' exposure to billing, and Studies 2-5 showed the effect of billing time in laboratory contexts that permitted random assignment of people to condition and, therefore, a better assessment of causality. Taken together, the survey and experimental data show that billing time promoted an economic evaluation of time that undermined participation in worklike activities lacking monetary payoff.

These empirical findings are highly consistent with Kaveny's (2001) insight that what may be important for understanding individual choices about time use is not so much how much people work or how much they are paid but *how* they account for their time and activities while working. Although the experience of filling out a timesheet may not

undermine one's sense of autonomy the way other forms of surveillance can, billing time does affect how people come to understand and comprehend their time and its relationship to money in ways that are psychologically consequential. Furthermore, these studies extend the earlier results on the effects of hourly payment (DeVoe & Pfeffer, 2007a, 2007b) to a different organizational practice, billing time, that is also likely to make the connection between time and money salient and lead to the use of a market-pricing decision logic for time but that does so independently of how people are actually compensated. The results are consistent with the idea that organizational practices can change the psychology of how people view time and work in ways that have consequences for choices and behaviors outside of the immediate work context.

There are several implications that are worth considering in the context of future research. First, our findings suggest that exposure to billing undermines the likelihood that one will engage in work lacking financial compensation. Interestingly, exposure to billing does not appear to affect individuals' general self-efficacy or their self-determination. Although further empirical work needs to replicate this finding, our results suggest that billing may be a monitoring technique that does not have the adverse consequences of diminishing one's sense of efficacy or self-determination. Nonetheless, there were consequences for how individuals made decisions about volunteering.

In the present research, we focused on activities that were unrelated to the tasks that individuals billed because we were interested in the spillover of decision logics across domains. Future research should assess how billing may influence the decisions individuals make about their time on the job. Specifically, there is a large literature that attests to the importance of organizational citizenship (extrarole) behaviors that are critical to organizational performance but fall outside the formal reward system (C. A. Smith, Organ, & Near, 1983). Because these activities are not linked to one's monetary compensation, it is theoretically consistent with our results that an individual's propensity to engage in these types of behaviors might also be undermined by exposure to billing.

Finally, further research should expand the consideration of time allocation decisions off the job beyond just volunteer activities. There are a host of quasivolunteer activities such as family, child care, and household chores that people may view differently after being exposed to billing. Interestingly, there are some worklike activities that occur off the job that people genuinely enjoy doing, such as volunteering time. Based on the tendency for lawyers who billed their time to outsource the generally enjoyable activity of volunteering, the salience of a market-pricing decision logic for time may lead individuals to outsource other activities that occur off the job regardless of whether they are enjoyable. In this way, billing time and the economic evaluation of time can cause individuals to make time allocation decisions that ignore other criteria important

to their moral identity or even their personal utility, actually leaving them less happy. Understanding whether and how economic evaluation can lead to inconsistent personal choices is a critical question for future research.

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Note

1. Taking the natural log of estimated yearly income did not substantively change the results.

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