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When Is Happiness About How Much You Earn? The Effect of Hourly Payment on the Money–Happiness Connection

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The authors argue that the strength of the relationship between income and happiness can be influenced by exposure to organizational practices, such as being paid by the hour, that promote an economic evaluation of time use. Using cross-sectional data from the United States, two studies found that income was more strongly associated with happiness for individuals paid by the hour compared to their non-hourly counterparts. Using panel data from the United Kingdom, Study 3 replicated these results for a multi-item General Health Questionnaire measure of subjective well-being. Study 4 showed that experimentally manipulating the salience of someone's hourly wage rate caused non-hourly paid participants to evince a stronger connection between income and happiness, similar to those participants paid by the hour. Although there were highly consistent results across multiple studies employing multiple methods, overall the effect size was not large.

Keywords: *hourly wage; income; organizational payment practices; subjective well-being*

Over the past several decades, there has been enormous interest from scholars in the social sciences—particularly in economics (e.g., Layard, 2005) and psychology (Diener & Seligman, 2004)—in understanding what affects individuals' happiness. This research has found, among other things, that people fail to accurately predict what will or what will not make them happy (e.g., T. D. Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000) and that donating money and time for the benefit of others increases happiness (e.g., Dunn, Aknin, & Norton, 2008; J. Wilson & Musick, 1999). Although researchers have approached the study of happiness in a variety of ways, conceptually the measurement

of happiness either has been based on the experience of negative/positive affect both overall and in moment-to-moment variation or has employed retrospective cognitive evaluations about one's life (Diener, 1984; Diener, Suh, Lucas, & Smith, 1999; Kahneman & Krueger, 2006). For purposes of exposition, we use the terms *happiness* and *subjective well-being* interchangeably, as both relate to cognitive evaluations about one's life as a whole or one's psychological well-being.

Within the broader study of happiness, one theoretically important question has focused on whether higher income and increases in income are associated with greater subjective well-being (e.g., Kahneman, Krueger, Schkade, Schwarz, & Stone, 2006; Layard, 2005; Stevenson & Wolfers, 2008). The so-called Easterlin hypothesis (Easterlin, 2003) argued that societal-level increases in income do not produce corresponding increases in societal-level happiness. Recent challenges to the Easterlin hypothesis have come from Stevenson and Wolfers, who maintained that a consistent relationship between income and happiness does exist, thereby empirically demonstrating that, as predicted by economics, income was an important determinant of happiness.

What seems clear from the existing research is that income and happiness are at least positively correlated in cross-sectional studies (e.g., Diener & Biswas-Diener, 2002; Kahneman et al., 2006). Indeed, Easterlin (2001)

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has written, “As far as I am aware, in every representative national survey ever done a significant bivariate relationship between happiness and income has been found” (p. 468). The strength of the relationship between income and happiness, however, varies considerably across studies and samples. Moreover, researchers have begun to explore individual differences that can moderate the link between income and subjective well-being. For instance, Malka and Chatman (2003) have shown that the connection between subjective well-being and income varies depending on individuals’ extrinsic and intrinsic orientations toward work, with individuals with a more extrinsic work orientation exhibiting a stronger association between income and subjective well-being.

Although individual differences can affect the relationship between income and subjective well-being, we hypothesize that organizational experiences may also play a role in understanding why some individuals evaluate their satisfaction with life differently than others do. One way of explaining variation in the relationship between income and happiness is to take seriously the large literature on focalism, which posits that people do not continuously think about their circumstances, but when they are primed to do so, for instance, by questions about specific aspects of their lives such as dating, a correlation between the dimensions queried and happiness can be made to appear (e.g., Schwarz & Strack, 1999). Although the focalism literature often explores relatively transitory effects, there is evidence that organizational arrangements, such as how people are paid (e.g., DeVoe & Pfeffer, 2007a, 2007b; Evans, Kunda, & Barley, 2004; Yakura, 2001), may cause people to alter their perspectives on the relationship between time and money.

In the present article, we use three sets of nationally representative survey data from two different countries, as well as an experiment, to test the theoretical prediction that people paid by the hour or who are temporarily made aware of their hourly wage rates exhibit a stronger relationship between income and happiness. The hypothesis is that organizational arrangements make some aspects of peoples’ work environments more or less salient and thereby affect the individuals’ judgments and attitudes, including how strongly they use income in evaluating their subjective well-being.

Background and Hypotheses

We argue that one factor often overlooked in the literature exploring the relationship between income and happiness is the organizational arrangements that make the connection between time and money and the monetary opportunity costs of time more or less salient. Because how time is used is inextricably linked with an individual’s personal identity and values (Mogilner & Aaker, 2009; Reed, Aquino, & Levy, 2007), the way someone evaluates

his or her time is likely to influence the very criteria used to assess happiness. Therefore, organizational arrangements, such as being paid by the hour (DeVoe & Pfeffer, 2007b) or billing one’s time on a timesheet (Yakura, 2001), can be psychologically important for understanding whether and to what extent individuals are likely to rely on income in evaluating their happiness.

To develop the logic for this hypothesis, we first review literature in organizational behavior that shows that organizational practices can cause people to become economic evaluators of their time. Then we review the decision-making literature that demonstrates the important role of focalism on the evaluation of subjective well-being. We argue that organizational arrangements that make the connection between time and money salient can be expected to cause people subject to those conditions to rely more heavily on income in assessing their subjective well-being.

Organizational Practices as Activators of Economic Evaluation

One example of organizational practices activating an economic evaluation, in this instance, of time use, is Evans et al.’s (2004) ethnographic study of engineers, software developers, technical writers, and information technology specialists who overwhelmingly sold their services to firms in exchange for an hourly wage. Being paid by the hour and the concomitant requirement to bill firms for the number of hours spent working (i.e., billable hours) led technical contractors to develop “an accountant’s appreciation for the microeconomics of time” (p. 19). Billing hours provided these contractors with extensive practice in accounting for their time and its monetary value. Because they were paid by the hour, “unlike salaried employees, contractors could put a precise value on every hour of the day—their hourly wage” (p. 21). Evans et al. observed that exposure to these organizational practices led the vast majority (86%–91%) of hourly contractors to be *economic evaluators*—appraising time’s value “solely by economic criteria” (p. 21) with only a small minority evaluating their time using a broader set of criteria, such as personal satisfaction and social obligations. Thus, as economic evaluators, these respondents focused almost exclusively on the monetary value of their time when making decisions about time use, for instance, whether or not to take time off.

Building on Evans et al.’s (2004) ethnographic work, DeVoe and Pfeffer (2007a, 2007b) examined the consequences of organizational practices that activate economic evaluation by analyzing the effect of hourly payment in nationally representative surveys and by having people calculate their hourly wages in experimental settings. They found that being paid by the hour was associated with a greater tendency for people to think of

time more like money, to be more willing to trade more of their leisure time to earn more money, and to be less willing to volunteer their time and to actually spend less time volunteering. Importantly, manipulating the salience of a respondent's hourly wage rate caused non-hourly paid individuals to respond more like their hourly paid counterparts.

The interaction of the demographic variable of hourly paid status with the experimental treatment of calculating an hourly wage is highly consistent with the psychological concepts of accessibility and salience associated with contemporary theories of knowledge activation (for a review, see Higgins, 1996). Once knowledge is acquired (e.g., the precise monetary value of one's time), it is encoded in long-term memory (Anderson, 1995). When knowledge of the precise monetary value of one's time has recently been made salient, the probability of it being more focal in decisions increases. Similarly, frequent priming increases the overall accessibility of the information and the likelihood of the information being focal in future decisions. Here the organizational practice of hourly payment is consistent with a situation that frequently primes the precise monetary value of one's time and thus makes the monetary returns of time more salient and focal in evaluations and decisions. Thus, currently being paid by the hour is likely to influence evaluation by making the monetary value of one's time chronically accessible, whereas calculating one's hourly wage rate is likely to temporarily make the monetary returns of time salient for individuals for whom it is not already chronically salient.

A logical implication of organizational practices affecting economic evaluation is the possibility that such practices can cause people to focus more on income not only when thinking about their time but also when evaluating overall happiness. In a seminal article, Kahneman et al. (2006) argued that evaluations of subjective well-being may be prone to a *focusing illusion*: "When people consider the impact of any single factor on their well-being . . . they are prone to exaggerate its importance" (p. 1908). In other words, a stronger positive relationship between income and well-being can exist because individuals focus on economic factors more when assessing their happiness. If organizational practices—such as hourly payment—lead individuals to focus on time's economic value, individuals frequently exposed to these practices may be more likely to rely on economic factors such as the amount of money they earn when evaluating their overall happiness.

The Central Role of Focalism in Subjective Well-Being Evaluations

Extensive research in decision making has shown that individuals often fail to retrieve all relevant information when making judgments and often overweight information that happens to be most accessible at the

moment the evaluation is being made. In their review of this literature as it relates to judgments of subjective well-being, Schwarz and Strack (1999) distinguished between influences on judgments of subjective well-being that are (a) due to information that is made temporarily accessible, such as information that has been just used to answer a previous question in a questionnaire, or (b) due to information that is chronically accessible—information that is made frequently salient in an individual's mind.

Examples of how temporarily salient information is used in making evaluations of subjective well-being come from a series of studies conducted by Schwarz and colleagues (Schwarz, Strack, & Mai, 1991; Smith, Schwarz, Roberts, & Ubel, 2006; Strack, Martin, & Schwarz, 1988). Participants who provided evaluations of their subjective well-being often exhibited a low or nonsignificant correlation between happiness and things such as dating frequency, marital satisfaction, or health. However, when respondents provided information on their dating frequency, marital satisfaction, or health just prior to their evaluations of subjective well-being, significant and stronger correlations emerged with evaluations of subjective well-being. Thus, the stronger empirical relationships provided evidence that participants focused more on information that was made temporarily salient in their evaluations of subjective well-being. But if information on any particular dimension is chronically accessible, that information should already be focal when an individual provides an uncontaminated assessment of subjective well-being (Higgins, 1996; Schwarz & Strack, 1999).

The implication we draw from this decision-making literature is that salient information is given more weight when respondents form their assessments of subjective well-being, as reflected in an increased correlation between the information and the subjective well-being evaluation. In the context of the present research, if hourly payment promotes a chronic tendency to economically evaluate time and happiness, we would expect the amount of income a respondent earns to be a focal and salient aspect of his or her evaluations of subjective well-being. Moreover, we would expect that among non-hourly paid workers for whom economic evaluation is not chronic, we should be able to cause income to become a more focal and salient aspect of their subjective well-being evaluations merely by making an hourly wage rate for time temporarily accessible. Therefore, in addition to the chronic differences we predicted to emerge across hourly status, we also experimentally manipulated the connection between time and money to be more accessible by making non-hourly paid workers temporarily aware of their approximate hourly wage rates. Using a variation on the manipulation of calculating an hourly wage rate employed by DeVoe and Pfeffer (2007a, 2007b), we hypothesized that non-hourly paid workers who were primed to be economic evaluators by

temporarily having an hourly wage rate for their time made salient would rely more on their incomes when evaluating their subjective well-being in a manner similar to hourly paid workers' more chronic state of economic evaluation.

Overview

In the series of studies that follow, we utilized a multi-method approach to test our hypotheses. Our use of preexisting data sets in the first three studies meant that we tested our theoretical prediction using different measures of happiness and well-being that reflect some of the variation in how this construct is measured. In our first two studies, we examine single-item self-report measures that are global assessments of happiness. In our third study, we used the General Health Questionnaire (GHQ) that is often used as a proxy measure of mental and subjective well-being. In the experimental data, we utilized both the GHQ and the Satisfaction With Life Scale (SWLS). Our ability to replicate the predicted findings across studies with different samples and different measures increases our confidence that the findings are not unique to one particular indicator of happiness or form of measurement.

STUDY 1

As an initial test of whether employees paid by the hour rely more on income when evaluating their happiness, we analyzed survey data from a nationally representative sample from the United States where measures of respondents' income, hourly status, and overall happiness were available. If hourly workers were more prone to economic evaluation and thus more likely to rely on income when evaluating their happiness, we predicted that income would be more strongly associated with happiness for hourly paid workers as compared to their non-hourly paid counterparts.

To address concerns that hourly paid workers might rely on income more strongly in evaluations of happiness because of other factors associated with hourly paid jobs, we included to the extent possible control variables available in the data set that were likely to influence happiness. Specifically, we controlled for factors related to the job (number of hours worked and occupation), the individual (gender, age, and education), and the family (marital status and the number of children).

Method and Measures

Data for this study come from the 2002 U.S. edition of the General Social Survey, a nationally representative cross-sectional survey of adults residing in the 48 contiguous

states. Extensive documentation of the survey and its methodology can be found on the National Opinion Research Center Web page (<http://www.norc.org/projects/general+social+survey.htm>).

Dependent Variable

Respondents' subjective well-being was assessed using an item asked as part of the ISSP Module, Social Relations and Support Systems in 2002. Specifically, respondents were asked, "If you were to consider your life in general these days, how happy or unhappy would you say you are, on the whole" and provided their responses on the following scale: *very happy*, *fairly happy*, *not very happy*, and *not at all happy*.¹

Independent Variables

Income. Respondents' family income was assessed using 23 different levels varying from under \$1,000 to \$110,000 or over. Categorical midpoints were imputed for each level to reflect 2002 U.S. dollars. In order to minimize problems with multicollinearity between variables used in creating statistical interaction terms and between variables and their squared counterparts, Aiken and West (1991) recommended mean centering continuous variables used for interactions in regressions. The use of mean-centered income does not in any way change the interpretation of the slopes in a regression because the procedure just involves subtracting a constant (the mean) from every observation. The value of mean-centered income squared was also included in the regression equation to control for the possibility of a curvilinear relationship between income and the dependent variable.

Hourly status. Respondents were asked, "In your main job, are you salaried, paid by the hour, or what?" Respondents who indicated *salaried* were coded as 0, and respondents who indicated *paid by the hour* were coded as 1.

Control variables. We statistically controlled for various job, individual, and family factors that may influence subjective well-being. For job factors, we controlled for the number of hours worked at all jobs and included five dummy variables for the 1980 top-tier occupational codes (where Managerial & Professional was the reference category, and dummies were included for Technical, Sales, & Administrative Support; Service; Farming, Forestry, & Fishing; Precision Production, Craft, & Repair; and Operators, Fabricators, & Laborers. For individual factors, we controlled for gender, centered age and centered age squared, and education (where 0 indicated *less than a college degree* and 1 indicated a *college degree or higher*). For family factors, we controlled for marital

status (where 0 indicated *not being married* and 1 indicated *currently being married*), and we controlled for the number of children in the household under 18 years old.

Results and Discussion

The means, standard deviations, and intercorrelations among study variables are reported in Table 1.

As an exploratory test of the hypothesis that hourly paid workers would rely more strongly on their incomes when evaluating their happiness than do their non-hourly paid counterparts, we first examined the simple correlation between income and happiness separately for non-hourly and hourly workers. We found that the association between income and happiness was entirely absent for non-hourly workers, $r = .03$, *ns*, but was significantly positive for hourly workers, $r = .22$, $p < .001$. In order to test whether this difference was statistically significant when objective factors related to the job, individual, and family were controlled, we regressed mean-centered income, hourly status, and the interaction of mean-centered income with hourly status on subjective well-being with the covariates of number of hours worked, occupation, gender, age, education, marital status, and number of children in the household included in the equation (see Table 2). This regression analysis showed no main effect of income, $\beta = .01$, $t(567) = 0.12$, *ns*, and no main effect of hourly status, $\beta = -.02$, $t(567) = -0.45$, *ns*. Importantly, there was a statistically significant interaction between income and hourly status, $\beta = .13$, $t(567) = 2.03$, $p < .05$, such that income had a greater effect on happiness for those employees paid by the hour.

The results from this first study, although obviously far from conclusive, were consistent with our hypothesis. Simple correlations showed that income was uncorrelated with happiness for salaried employees, whereas it was significantly associated with happiness for people paid by the hour. In a regression equation controlling for an extensive set of covariates, there was a statistically significant interaction between hourly status and income, indicating that income had a greater effect on happiness for people paid by the hour. Although these results were highly consistent with our theoretical prediction about the effect of hourly payment, the effect size of the interaction of income by hourly status was small.

STUDY 2

Study 2 was conducted on a larger nationally representative sample from the United States to test whether we could replicate the findings from Study 1 on a different sample with a slightly different measure of happiness.

Method and Measures

Data analyzed for this study come from the first wave of the National Survey of Families and Households, a nationally representative cross-sectional survey of U.S. adults conducted in 1987–1988. Extensive documentation of the survey and its methodology can be found at <http://www.ssc.wisc.edu/nsfh>.

Dependent Variable

We analyzed individuals' responses to a single-item measure of happiness ("Taking things all together, how would you say things are these days?") on a 1 (*very unhappy*) to 7 (*very happy*) Likert-type scale.

Independent Variables

Income. Respondents' reported household wage and salary income was used. As with the previous study, income was mean centered, and mean-centered income squared was entered into the model to control for the curvilinear relationship between income and the dependent variable.

Hourly status. Respondents were asked, "How are you paid in your main job?" Respondents who indicated *salaried* were coded as 0, and respondents who indicated *paid by the hour* were coded as 1. Respondents who indicated *paid in some other way* were excluded.

Control variables. As in the previous study, we statistically controlled for the same set of job, individual, and family factors.

Results and Discussion

The means, standard deviations, and intercorrelations among study variables are reported in Table 3. As with Study 1, the association between income and happiness was lower for non-hourly workers, $r = .04$, $p < .05$, than for hourly workers, $r = .09$, $p < .001$.

In order to test whether the difference in the strength of the relationship between income and happiness differed between hourly and salaried employees, we estimated the regression equation presented in Table 4. The results demonstrated a positive effect of income, $\beta = .06$, $t(4,858) = 1.97$, $p = .05$, and a negative effect of hourly status, $\beta = -.06$, $t(4,858) = -3.23$, $p = .001$, on happiness. Consistent with our argument, there was a statistically significant interaction between income and hourly status, $\beta = .05$, $t(4,858) = 2.40$, $p = .02$, such that income had a greater effect on happiness for those employees paid by the hour. As was the case for Study 1, the effect size of the interaction of income by hourly status was small.

TABLE 1: Means, Standard Deviations, and Intercorrelations of Study Variables in the 2002 U.S. General Social Survey

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Income (in 1986 U.S.\$)	54,759.40	37,150.70	—													
2. Hourly status (1 = hourly)	0.62	0.49	-.37***	—												
3. Number of hours worked per week	42.21	14.72	.14***	-.25***	—											
4. Managerial & Professional	0.33	0.47	.35***	-.44***	.05	—										
5. Technical, Sales, & Administrative Support	0.28	0.45	-.07*	.13***	-.06	-.43***	—									
6. Service	0.15	0.36	-.18***	.14***	-.10**	-.30***	-.26***	—								
7. Farming, Forestry, & Fishing	0.01	0.10	-.06	-.02	-.02	-.07*	-.06	-.04	—							
8. Precision Production, Craft, & Repair	0.10	0.29	-.02	.13***	.10**	-.23***	-.20***	-.14**	-.03	—						
9. Operators, Fabricators, & Laborers	0.11	0.32	-.16***	.20	.05	-.25***	-.22***	-.15***	-.04	-.12***	—					
10. Gender (1 = female)	0.50	0.50	-.13***	.07	-.23	.07*	.12***	.13***	-.10**	-.24***	-.22***	—				
11. Age	40.37	12.81	.23***	-.13***	-.08*	.16***	-.08**	-.08**	.03	.02	-.07*	.04	—			
12. College degree or higher	0.28	0.45	.39***	-.45***	.07*	.53***	-.13***	-.18***	-.06	-.15***	-.23***	.01	.14***	—		
13. Marital status (1 = married)	0.46	0.50	.44***	-.08**	.03	.08**	-.04	-.05	.04	.06	-.02	-.13***	.17***	.10**	—	
14. Number of household children	0.57	1.01	.04	.04	-.02	.04	-.04	.04	-.02	-.08**	.05	.11***	-.17***	-.04	.18***	—
15. Subjective well-being	3.35	0.62	.17***	-.10**	.05	.09**	.01	-.07	-.02	-.03	-.05	-.05	.10**	.08**	.19***	.03

* $p < .10$. ** $p < .05$. *** $p < .01$.

TABLE 2: Predicting Subjective Well-Being in the 2002 U.S. General Social Survey

Predictors	β
Income	.01
Income ²	-.07
Hourly status (1 = hourly)	-.02
Income \times Hourly Status	.13**
Number of hours worked	.04
Occupation (relative to Managerial & Professional)	
Technical, Sales, & Administrative Support	-.01
Service	-.03
Farming, Forestry, & Fishing	.01
Precision Production, Craft, & Repair	-.06
Operators, Fabricators, & Laborers	-.08
Gender (1 = female)	-.05
Age	.04
Age ²	.11**
Education (1 = college degree or higher)	.01
Marital status (1 = married)	.15***
Number of children	.03
R ²	.09***

NOTE: Estimates are standardized ordinary least squares coefficients. Positive coefficients indicate higher subjective well-being. ** $p < .05$. *** $p < .01$.

The results from these first two studies both were consistent with our hypothesis that income had a stronger effect on people's evaluations of happiness for those paid by the hour. However, hourly and salaried employees can and undoubtedly do differ in many ways besides those we were able to statistically control for given the availability of various demographic variables. People may differentially self-select into hourly and non-hourly paid jobs and do so in ways that can complicate our attempts to attribute differences in the strength of the effect of income on happiness to how people are paid. For instance, there is an extensive literature documenting the effect of stable individual differences in explaining the evaluation of happiness (e.g., Eid & Diener, 2004; for a review see Lucas, 2008). It may be that individuals who rely more on income in evaluating their subjective well-being self-select into jobs that pay by the hour. One way of controlling for stable individual differences in preferences and attitudes is to estimate a fixed-effects model where unmeasured factors associated with specific individuals can be statistically controlled. This analysis requires using longitudinal data, which is what we did in the third study.

STUDY 3

In our third study, we used panel data from a nationally representative survey of British employees to control for stable individual differences and observe the effects of changes in income on changes in subjective well-being as a function of hourly payment. Additionally, these British

data permit us to test at least to some extent the generalizability of the effect of hourly status in a different national context. As many surveys and studies have shown (e.g., Bell & Freeman, 1995; Sousa-Poza & Henneberger, 2002; Stier & Lewin-Epstein, 2003), the United States is different from other countries in Western Europe with respect to attitudes about time and work. Therefore, it is useful to replicate our results in a context with somewhat different social values and norms concerning work and leisure. The British data also afforded us the opportunity to control for a similar set of control variables as in Study 1 and 2. Specifically, we controlled for the number of hours worked, occupation, age, education, marital status, and number of children. The use of fixed effects further held constant all stable individual differences (including gender).

As a measure for subjective well-being, we used responses to the GHQ. This measure is the only measure of well-being to be included in every wave of the British Household Panel Survey (BHPS). This multi-item measure has been used by several economists as an indicator of self-reported subjective well-being (e.g., Clark, 2003; Clark & Oswald, 2002; Creed & Evans, 2002; Gardner & Oswald, 2007), which also allows explicit comparisons with prior empirical work. To the extent that we are able to replicate the findings from Study 1 and 2 using a different measure of subjective well-being that uses data from a different country, we can assess the degree of convergent validity in the empirical tests of our hypothesis.

Data and Measures

We analyzed data collected in multiple waves of the BHPS (University of Essex, Institute for Social and Economic Research, 2008, British Household Panel Survey: Waves 1-16, 1991-2007 [computer file]). The BHPS is an annual household survey started in 1991, and it interviews each person in the household who is over 16 years of age (adult members). The BHPS is nationally representative of households in Britain, and the same individuals are reinterviewed in successive waves where all adult members who split off into new households are also reinterviewed. Extensive documentation of the survey may be obtained through the BHPS homepage (<http://www.iser.essex.ac.uk/ulsc/bhps>).

All of the measures employed in this study were repeated across each of the waves we analyzed. There is both entry and exit from the survey, resulting in unbalanced data with gaps. Because the BHPS only began measuring hourly status in 1999, we were able to utilize just the most recent waves (Waves 9-16). Individuals lacking full responses to the variables within each panel wave were excluded listwise from the data set. The resulting sample comprised 52,996 observations across 12,431 respondents.

TABLE 3: Means, Standard Deviations, and Intercorrelations of Study Variables in the National Survey of Families and Households

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Income	30,107.60	34,033.20	-														
2. Hourly status (1 = <i>hourly</i>)	0.59	0.49	-.17***	-													
3. Number of hours worked per week	38.71	15.24	.04***	-.15***	-												
4. Managerial & Professional	0.30	0.46	.17***	-.44***	.06***	-											
5. Technical, Sales, & Administrative Support	0.28	0.45	-.02	.01	-.04***	-.41***	-										
6. Service	0.14	0.34	-.13***	.16***	-.11***	-.26***	-.25***	-									
7. Farming, Forestry, & Fishing	0.01	0.12	-.04***	.02	-.02	-.08***	-.07***	-.05***	-								
8. Precision Production, Craft, & Repair	0.11	0.32	.01	.16***	.08***	-.23***	-.22***	-.14***	-.04***	-							
9. Operators, Fabricators, & Laborers	0.14	0.35	-.06***	.28***	.03	-.26***	-.25***	-.16***	-.05***	-.14***	-						
10. Other Occupation	0.01	0.08	.00	-.08***	.02	-.05***	-.05***	-.03***	-.01	-.03***	-.03***	-					
11. Gender (1 = <i>female</i>)	0.54	0.50	-.09***	.06***	-.25***	-.01	.22***	.16***	-.09***	-.30***	-.15***	-.05***	-				
12. Age	37.74	11.49	.05***	-.06***	-.13***	.07***	-.07***	.04***	.00	-.02	-.02	-.03***	.02	-			
13. College degree of higher	0.24	0.43	.18***	-.42***	.03***	.52***	-.13***	-.17***	-.04***	-.15***	-.21***	.01	-.07***	-.01	-		
14. Marital status (1 = <i>married</i>)	0.60	0.49	.26***	-.04***	.00	.02	-.03*	-.05***	.03**	.06***	.00	.00	-.17***	.01	.03**	-	
15. Number of children	1.03	1.17	.01	.07***	.00	-.06***	.01	.02	.03***	.02	-.05***	.00	.02	-.17***	-.08***	.22***	-
16. Subjective well-being	5.38	1.34	.08***	-.07***	.01	.03*	-.01	-.02	.00	.03**	-.03**	.02	-.05***	.01	.04***	.19***	-.01

* $p < .10$. ** $p < .05$. *** $p < .01$.

TABLE 4: Predicting Subjective Well-Being in a National Survey of Families and Households

Predictors	β
Income	.06**
Income ²	-.07***
Hourly Status (1 = <i>hourly</i>)	-.06***
Income \times Hourly Status	.05**
Number of hours worked	.00
Occupation (relative to Managerial & Professional)	
Technical, Sales & Administrative Support	.01
Sales	.02
Farming, Forestry, & Fishing	.01
Precision Production, Craft, & Repair	.03*
Operators, Fabricators, & Laborers	.00
Other	.02
Gender (1 = <i>female</i>)	.00
Age	-.04**
Age ²	.06***
Education (1 = <i>college degree or higher</i>)	.01
Marital status (1 = <i>married</i>)	.18***
Number of children	-.03*
R ²	.05***

NOTE: Estimates are standardized ordinary least squares coefficients. Positive coefficients indicate higher subjective well-being. * $p < .10$. ** $p < .05$. *** $p < .01$.

Dependent Variable

Every wave of the BHPS contains a GHQ score derived from a 12-item set of questions where respondents were asked to report on how they felt recently, using a list of variables related to well-being, ranging from self-esteem to depression. For example, one question is, "Have you recently been feeling reasonably happy, all things considered?" with the response choices of *more so than usual*, *about the same as usual*, *less so*, and *much less than usual*. Using the same response choices, the other items include, "Been thinking of yourself as a worthless person?" "Been losing confidence in yourself?" "Been able to enjoy your normal day-to-day activities?" "Felt you could not overcome your difficulties?" "Been able to face up to your problems?" "Felt constantly under strain?" "Felt capable of making decisions about things?" "Felt that you are playing a useful part in things?" "Lost much sleep over worry?" "Been able to concentrate on whatever you are doing?" and "Been feeling unhappy and depressed?" The BHPS converted valid answers to all 12 items into a single scale by summing responses from 0 (*much less than usual*) to 3 (*more so than usual*), resulting in a scale ranging from 0 to 36. We coded this measure so that higher values indicated greater subjective well-being.

Independent Variables

Income. Total labor income from the previous month in U.K. pounds (£) was used as the measure of income. Using the Consumer Price Index values from

the government Time Series Data Web site (<http://www.statistics.gov.uk/statbase/TSDSeries1.asp>), income in each year was expressed in constant 2005 value. As with the previous studies, income was mean centered, and mean-centered income squared was entered into the model to control for the possible curvilinear relationship between income and the dependent variable.

Hourly status. We created a dummy variable for the respondent's hourly status, where 0 indicated *non-hourly status* (either salaried or basic salary plus commission) and 1 indicated *hourly status*.

Control variables. As in the previous studies, we statistically controlled for a set of variables that are potentially related to individuals' assessments of their subjective well-being. For job-related factors, we controlled for the total hours normally worked in a week, excluding meal breaks, as a measure of the number of hours worked and included eight dummy variables for the 1990 top-tier occupational codes (where Managers & Administrators was the reference category and dummies were included for Professions; Associate Professional & Technical; Clerical & Secretarial; Craft & Related; Personal & Protective Service; Sales; Plant & Machine Operatives; and Other). For individual characteristics, we controlled for age (mean-centered age and mean-centered age squared) and education (where 0 indicated *less than A-levels* and 1 indicated *A-levels or greater*). For family factors, we controlled for marital status (where 0 indicated *not being married* and 1 indicated *currently being married*) and for the number of children in the household.

Results and Discussion

We used the longitudinal nature of the data to see whether the relationship between income and subjective well-being varied by hourly status, holding individual differences constant. Table 5 provides the means, standard deviations, and intercorrelations for the most recent panel of data. Within the most recent panel of data, the association between income and subjective well-being was lower for non-hourly workers, $r = .05$, $p = .05$, than for hourly workers, $r = .11$, $p = .001$.

In order to test whether increases in income are associated with increases in subjective well-being differently for individuals depending on how they are paid, we conducted a fixed-effects regression. The coefficients and standard errors associated with each predictor are presented in Table 6. The regression analysis revealed no main effect of income, $B = 0.0000267$, $SE = 0.0000526$, $t(40,547) = 0.51$, *ns*, and no main effect of hourly status,

TABLE 5: Means, Standard Deviations, and Intercorrelations of Study Variables in Final Wave of Data Analyzed of the British Household Panel Survey

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Income (in 2005£)	2,035.15	1,306.33	-															
2. Hourly status (1 = hourly)	0.33	0.47	-.36***	-														
3. Number of hours worked per week	34.30	9.19	.38***	-.21***	-													
4. Managers & Administrators	0.20	0.40	.31***	-.24***	.17***	-												
5. Professions	0.11	0.32	.20***	-.22***	.01	-.18***	-											
6. Associate Professional & Technical	0.15	0.36	.03	-.16***	-.04**	-.21***	-.15***	-										
7. Clerical & Secretarial	0.16	0.37	-.20***	-.07***	-.13***	-.22***	-.16***	-.19***	-									
8. Craft & Related	0.09	0.29	.03	.21***	.17***	-.16***	-.11***	-.13***	-.14***	-								
9. Personal & Protective Service	0.09	0.29	-.16***	.14***	-.13***	-.16***	-.11***	-.13***	-.14***	-.10***	-							
10. Sales	0.06	0.23	-.13***	.16***	-.17***	-.12***	-.09***	-.10***	-.11***	-.08***	-.08***	-						
11. Plant & Machine Operatives	0.07	0.26	-.04	.22***	.15***	-.14***	-.10***	-.12***	-.12***	-.09***	-.09***	-.07***	-					
12. Other Occupation	0.06	0.24	-.11***	.23***	-.07***	-.13***	-.09***	-.11***	-.11***	-.08***	-.08***	-.06***	-.07***	-				
13. Age	44.47	10.26	-.03	.13***	-.14***	-.05**	.02	-.10***	.04**	-.03	.05**	.10	.06***	.07***	-			
14. Education (A-level or higher)	0.52	0.50	.33***	-.31***	.07***	.10***	.29***	.15***	-.11***	-.07***	-.13***	-.07***	-.13***	-.16***	-.15***	-		
15. Marital status (1 = married)	0.67	0.47	.05**	.01	-.09***	.05**	.01	-.05***	-.02	-.006	.01	-.02	.01	.24***	.00	-		
16. Number of children	0.63	0.91	.12***	-.10***	-.05***	.05**	.03	.05***	-.05**	.00	-.02	-.02	-.05**	-.03	-.33***	.07***	.24***	-
17. General Health Questionnaire	25.07	4.88	.07***	-.04	.07***	.02	-.01	.02	-.06***	.05**	-.01	-.06***	.03	.00	-.02	.04**	.00	.00

***p < .05. **p < .01.

TABLE 6: Fixed-Effect Model Predicting Subjective Well-Being Across Waves of the British Household Panel Survey

Predictors	B (SE)
(Constant)	25.06162 (0.2148533)***
Income	0.0000267 (0.0000526)
Income ²	-1.22e-09 (1.12e-09)
Hourly status (1 = <i>hourly</i>)	0.0475655 (0.0777862)
Income × Hourly Status	0.0001663 (0.0000725)**
Number of hours worked	-0.0003256 (0.0036659)
Occupation (relative to Managers & Administrators)	
Professions	0.2194377 (0.1336376)
Associate Professional & Technical	0.1483485 (0.1166001)
Clerical & Secretarial	0.0122402 (0.1076522)
Craft & Related	0.0280669 (0.149067)
Personal & Protective Service	-0.1689223 (0.1332857)
Sales	0.1189949 (0.132835)
Plant & Machine Operatives	-0.1444227 (0.1477212)
Other	-0.0079417 (0.1348054)
Age	-0.0711175 (0.0096006)***
Age ²	0.0004366 (0.0004085)
Education (1 = <i>A-level or higher</i>)	0.0459682 (0.2127275)
Marital status (1 = <i>married</i>)	0.296883 (0.1040288)**
Number of children	-0.0558313 (0.0537033)
R ²	.53***

NOTE: Estimates are fixed-effects coefficients with standard errors in parentheses. Based on 52,996 observations pooled from 12,431 respondents. Positive coefficients indicate greater subjective well-being on the General Health Questionnaire measure.

** $p < .05$. *** $p < .01$.

$B = 0.0475655$, $SE = .0777862$, $t(40,547) = 0.61$, ns . Consistent with our hypothesis, there was a significant interaction of income by hourly status, $B = .0001663$, $SE = .0000725$, $t(40,547) = 2.29$, $p = .02$.

Using British longitudinal data that permit us to statistically control for unobserved individual differences, as well as to pick up the effects of changes from hourly to salaried pay status and the reverse, we observed a significant interaction such that changes in income are more strongly associated with changes in subjective well-being when people are paid by the hour. Of course, this study still leaves open the possibility that there are individual differences that are not stable (and therefore not controlled for by the fixed-effects model) that are related to both the income-happiness link and pay status. Therefore, in our final study, we wanted to explore whether by simply making hourly pay salient to a randomly assigned group of participants we could affect the strength of the income-happiness relationship.

STUDY 4

Although our first three studies controlled for numerous demographic variables, used three different national samples, and in the third study even controlled for fixed

individual effects and longitudinal changes in how people are paid, it is still the case that these analyses inevitably leave the causal role of the effects of hourly payment somewhat uncertain. People are not randomly assigned to different payment regimes, and they cannot be for the most part. However, what we can do is to experimentally make salient an individual's hourly wage rate and see if this treatment affects the strength of the income-happiness connection.

If hourly payment affects the use of income when evaluating one's subjective well-being, we predicted that making the economic value of time temporarily accessible by having people calculate their approximate hourly wage rates would increase the extent to which non-hourly paid workers relied on their incomes in evaluating their subjective well-being and cause them to respond more like their hourly paid counterparts. This argument implies a predicted three-way interaction between income, hourly status, and condition assignment on evaluations of subjective well-being.

Method

Participants

Participants were recruited from a nationwide database maintained at a private West Coast university to respond to questions regarding life attitudes. Study sign-ups were made available only to database members who had indicated their employment as full-time in a pre-screening session 4 months prior to this study. A total of 164 participants provided complete responses to the online questionnaire, and each received a \$5 gift certificate to an online retailer.

Procedure

After reading a consent form, participants were told that the researchers were conducting a survey on how Americans think about their time and that participants would respond to demographic questions about their jobs so that comparisons could be made with national survey estimates. This introduction provided a rationale for asking participants to respond to detailed questions concerning their earnings and work hours that comprised the experimental manipulation.

Manipulation. Participants randomly assigned to the control condition proceeded directly to the dependent measures of subjective well-being, whereas participants randomly assigned to the "calculate hourly" condition were asked about their yearly earnings, average number of hours worked per week, and the number of weeks worked per year, and they were then asked to use this information to calculate their approximate hourly wages.

Participants were told they should feel free to use scratch paper or a calculator on their computer in responding to two questions where they were asked to multiply the number of weeks worked in the prior year by the average number of hours worked per week in the prior year. Then participants were asked to take their yearly salary in the prior year and divide it by the total number of hours they worked during the year. Participants were told that this number was their “approximate hourly wage (i.e., the amount of money you earn per hour).” A dummy variable was created based on the condition to which individuals were assigned, where individuals in the control condition were coded 0 and individuals in the calculate hourly condition were coded 1.

Income. We used participants’ responses to the question, “How much did you earn before taxes or other deductions?” as the measure of income in 2007 U.S. dollars. This response was elicited as part of the manipulation for participants in the calculate hourly condition and was gathered toward the end of the survey for participants in the control condition. Because of the limited sample size and the variability of income values, we set a threshold for eliminating outliers that were more than 3 standard deviations from the mean. One response met this criterion for exclusion and was excluded from the analyses.² As with the previous studies, income was mean centered, and mean-centered income squared was entered into the model to control for the possibility of a curvilinear relationship between income and the dependent variable of happiness.

Hourly status. Toward the end of the survey, participants were asked to respond either *yes* or *no* to the following item: “I am paid by the hour, so how much I earn is a direct consequence of how many hours I work.” Participants who responded *yes* to this question were coded as 1, and participants who responded *no* were coded as a 0.

Subjective well-being. Participants responded to two different measures of subjective well-being. The first measure was the identical GHQ measure analyzed in Study 3. The items were combined to form a scale with good reliability (Cronbach’s $\alpha = .84$). As with Study 3, a summation of the items was used to create a composite score ranging from 0 to 36, where higher values indicated greater subjective well-being.

In addition to the GHQ, we also included the standard measure of subjective well-being used in the literature, Diener, Emmons, Larsen, and Griffin’s (1985) SWLS. The five items (i.e., “In most ways my life is close to my ideal,” “The conditions of my life are excellent,” “I am satisfied with my life,” “So far I have gotten the important things I want in my life,” and “If I could

TABLE 7: Means, Standard Deviations, and Intercorrelations of Study Variables in Experiment

Variables	M	SD	1	2	3	4
1. Income (\$)	44,314.64	35,691.56	–			
2. Hourly Status (1 = <i>hourly</i>)	.44	.50	-.28***	–		
3. Condition (1 = <i>calculate hourly</i>)	.46	.50	-.04	.07	–	
4. General Health Questionnaire	25.74	4.30	.14*	-.10	.14*	–
5. Satisfaction With Life Scale	4.82	1.35	.09	-.14*	.12	.56***

* $p < .10$. *** $p < .01$.

change my life over, I would change almost nothing”) were rated on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). These items exhibited excellent reliability (Cronbach’s $\alpha = .92$) and were combined into a composite measure of overall life satisfaction.

Results

Table 7 reports the means, standard deviations, and intercorrelations among the study variables.

We predicted that the association between income and subjective well-being would be stronger for hourly paid workers in comparison to their non-hourly paid counterparts. However, we also expected this interaction to be moderated by the calculate hourly pay manipulation such that non-hourly respondents who calculated their hourly wages as part of the study would respond similarly to their hourly paid counterparts and different from those who did not perform this calculation. Thus, we hypothesized a three-way interaction between income, hourly status, and experimental condition in predicting subjective well-being. Main effects were dummy coded (or, in case of income, mean centered) and multiplied to form interaction terms in accordance with Aiken and West (1991). As follow-up tests between cells, we performed a test devised by Williams (1959) and endorsed by Steiger (1980) for the difference between two correlations. In Table 8, we present the results of these analyses for each of the two measures of subjective well-being.

Subjective Well-Being as Measured by the GHQ

We predicted a positive association between income and responses to the GHQ among either hourly paid workers or non-hourly workers who have had an hourly wage rate made temporarily accessible by the experimental manipulation. Table 8 presents the standardized coefficients for each term in the model. There were no significant main effects of either income, hourly status, or the calculate hourly manipulation. There were two significant two-way interactions. First, consistent with

TABLE 8: Predicting General Health Questionnaire (GHQ) and Satisfaction With Life Scale (SWLS) as a Function of Income, Hourly Status, and Experimental Condition

Predictors	GHQ	SWLS
	β	β
Income (A)	-.07	-.11
Income ²	-.03	.00
Hourly status (B)	-.13	-.25**
Calculate hourly condition (C)	.03	-.05
A \times B	.33**	.25*
A \times C	.26**	.21
B \times C	.08	.21
A \times B \times C	-.42***	-.32**
R ²	.12**	.10**

NOTE: Estimates are standardized ordinary least squares coefficients. Positive values indicate increased subjective well-being for both the GHQ and SWLS measures.

* $p < .10$. ** $p < .05$. *** $p < .01$.

the prior results, income was a stronger predictor of GHQ for hourly workers, $\beta = .33$, $t(154) = 2.51$, $p = .01$. Additionally, income was a stronger predictor of GHQ for individuals randomly assigned to calculate their hourly wage rates, $\beta = .26$, $t(154) = 2.05$, $p = .04$. Most importantly, as we predicted, there was a statistically significant three-way interaction between income, hourly status, and experimental condition, $\beta = -.42$, $t(154) = -3.22$, $p = .002$.

In order to explore the nature of the three-way interaction, we examined the correlation of income with subjective well-being for the different subject subpopulations. In the control condition, workers paid by the hour showed a significant correlation between income and the GHQ, $r = .37$, $p = .03$, whereas among the non-hourly paid workers, the correlation was not statistically significant and not even positive, $r = -.11$, *ns*. The test for the difference between the two correlations was statistically significant, $z = 2.22$, $p = .03$.

More critical to our argument, there was a statistically significant, positive correlation between income and the GHQ measure of subjective well-being for those non-hourly paid workers who calculated their approximate hourly wage rates before responding to the subjective well-being measure, $r = .40$, $p = .01$. The test for the difference between the correlations for non-hourly paid respondents who did and did not calculate their hourly wages was statistically significant, $z = -2.43$, $p < .05$. Furthermore, the correlation between income and the GHQ exhibited by non-hourly paid workers in the calculate hourly condition did not differ from the correlation between income and the GHQ exhibited by hourly paid workers in the control condition ($z = 0.15$, *ns*). Thus, as we expected from our hypothesis about how calculating an hourly wage makes people economic evaluators, non-hourly paid workers who calculated

their hourly wages exhibited an association between income and their subjective well-being that was the same as people paid by the hour and different from those who did not have their hourly wages made salient through the experimental treatment.

Subjective Well-Being as Measured by the SWLS

We conducted the identical analyses on participants' responses to the SWLS measure of subjective well-being as well, to try to ensure that our findings were not sensitive to the particular measure we employed. Table 8 shows the standardized coefficient of each term in the multiple regression. In this instance, there was again no effect of income, although there was a negative main effect of hourly status on SWLS. The interaction of income by hourly status was again statistically significant in the expected direction, although this time only at the $p < .06$ level. Most importantly, once again as predicted, a statistically significant three-way interaction between income, hourly status, and experimental condition was observed, $\beta = -.32$, $t(154) = -2.48$, $p = .01$. Consistent with the associations observed with the GHQ measure, in the control condition people paid by the hour exhibited a positive correlation between income and the SWLS, $r = .28$, $p = .10$. Among people not paid by the hour, the correlation was not significant and, again, was not even positive, $r = -.13$, *ns*. The test for the differences between the two correlations was just above conventional levels of statistical significance, $z = 1.86$, $p = .06$.

Again consistent with our hypothesis, the nonsignificant correlation between income and SWLS exhibited among non-hourly paid workers in the control condition was positive for those who calculated their approximate hourly wage rates before responding to the SWLS, $r = .24$, $p = .14$. The test for the difference between these two correlations was marginally statistically significant, $z = -1.56$, $p < .09$. Furthermore, the correlation between income and the SWLS exhibited by non-hourly paid workers in the calculate hourly condition did not differ ($z = -0.18$, *ns*) from the correlation between income and SWLS exhibited by people paid by the hour in their jobs. Just as in the case of the results with the GHQ, non-hourly paid workers who calculated their hourly wages showed an association between income and subjective well-being that was similar to those paid by the hour.

DISCUSSION

Using a convenience sample of employed participants, we experimentally manipulated the salience of people's hourly wages to see whether we could make economic evaluation salient and if that affected the strength of the relationship between income and subjective well-being.

In the control condition, we replicated the findings for hourly status documented in Studies 1, 2, and 3 with nationally representative samples from two different countries. Specifically, people paid by the hour exhibited a stronger relationship between income and happiness than those not paid by the hour. Although the effect size of the interaction between hourly status and income was small in the data sets analyzed in Studies 1, 2, and 3, we detected a medium effect size within this sample. This stronger effect size may be because we were able to more accurately and directly ask individuals if they were paid by the hour. Alternatively, the results may have something to do with the characteristics of the convenience sample. Caution is warranted in interpreting these cross-sectional relationships in this sample, but unlike the previous studies, the use of random assignment provides more evidence for the causal mechanism.

Importantly, we found that randomly assigning participants to a treatment that made their hourly wage rates salient also increased the effect of income in evaluating subjective well-being. This resulted in a statistically significant three-way interaction where non-hourly paid respondents who calculated their approximate hourly wages just prior to evaluating their subjective well-being showed a stronger association between income and happiness. Further bolstering our confidence in these experimental findings is the fact that our results were consistent across two distinct, well-established measures of subjective well-being, although the effect size of the three-way interaction was somewhat weaker in the case of the SWLS measure (medium effect size) in comparison to the GHQ (large effect size). The key finding from the experiment was that having people calculate their hourly wage rates induced non-hourly workers to evaluate happiness more like hourly paid employees. This result provides evidence consistent with a psychological process of economic evaluation, although it is ambiguous as to whether this process results from a general increased saliency of money and money-related concepts created by the priming or from the more specific evaluation of time in terms of money. Regardless of which interpretation turns out to be correct, the important result is that payment regime has psychological implications for understanding the money–happiness connection.

GENERAL DISCUSSION

Summary of Findings

Contributing to the debate over whether or not income is an important determinant of happiness, we sought to test the theoretical question of whether exposure to organizational practices that make economic

evaluation, in this instance of time, salient would affect the strength of the association between money and happiness. Specifically, we argued that organizational practices that make the connection between time and money focal are likely to cause individuals to rely more heavily on income when assessing their subjective well-being.

Using multiple methods and data from two countries, we found consistent evidence that the economic evaluation associated with hourly payment caused individuals to rely more on income when evaluating their happiness. The results from Studies 1 and 2 showed that income was more highly associated with subjective well-being for hourly paid workers in comparison to their non-hourly counterparts, even while statistically controlling for many demographic factors. The longitudinal data from the United Kingdom used in Study 3 replicated these findings even when using a fixed-effects model that holds unobserved, stable individual differences constant and showed that increases in income were more strongly associated with increases in subjective well-being for respondents when they were paid by the hour as compared to when they were not paid by the hour. Finally, Study 4 used experimental data to confirm the causal effect of making one's hourly wage salient. Having non-hourly workers calculate their approximate hourly wage rates prior to their evaluations of subjective well-being focused them on income in evaluating their subjective well-being, and as a result, they exhibited a relationship between income and happiness similar to those of people normally paid by the hour. These results are consistent with the hypothesis that being paid by the hour makes economic evaluation chronically accessible in the evaluation of subjective well-being and that this connection can be made temporarily salient among non-hourly workers by prompting them to focus on their implicit hourly wage.

Of course, subjective well-being is determined by a variety of different factors, and sociostructural characteristics typically explain very small amounts of variance in comparison to purely psychological variables such as personality and self-regulation (e.g., Staudinger, Fleeson, & Baltes, 1999). Consistent with prior work on sociostructural variables, the observed effect size of the interaction of income by hourly status in predicting subjective well-being was small in our secondary data sources utilized in Studies 1, 2, and 3 and of a medium size in our convenience sample where we asked in a more precise fashion whether or not individuals were compensated on the basis of how many hours they worked. It is interesting that when we had the ability to be more precise in how respondents were asked about their hourly status we detected stronger effect sizes. This may be due to better measurement of hourly status or the characteristics of the sample. However, the evidence

from the four studies is highly consistent—how someone is paid, and whether or not they calculate their hourly wage rates, affects the way in which subjective well-being is evaluated.

Limitations and Implications for Future Research

Although our findings are highly consistent across the four studies, there are several limitations to consider in thinking about future research. First, our analysis of the effects of being paid by the hour on the relationship between income and happiness has been limited to Western cultures. There is an extensive literature showing that the assessment of happiness differs dramatically in non-Western cultures (for a review, see Diener & Suh, 2000). Examining economic evaluation and its causes and consequences in non-Western cultures would help to further establish the generalizability of our findings.

Second, although we found similar results across a variety of different measures of subjective well-being that had a cognitive evaluation component of either one's life as a whole or one's well-being, we do not have any evidence on whether the effect is only observed in cognitive evaluation of subjective well-being or would also occur with an affect or moment-to-moment measures of experienced well-being (e.g., Kahneman et al., 2006). We have relied on the focalism literature as a source of our understanding about how hourly payment affects the evaluation of subjective well-being. It may be that income is a more important correlate of hourly paid workers' evaluations of subjective well-being precisely because the hourly wage rate for their time is made repeatedly salient to them in their day-to-day lives. Future research will be needed to determine the effect of income on individuals' aggregated moment-to-moment experiences (cf. Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004).

Third, it would also be useful to know how both hourly and non-hourly paid employees use nonmonetary criteria such as health, family, or time spent on community activities as they evaluate their subjective well-being and whether economic evaluation affects their reactions to other aspects of their lives as well. Yet another important extension to the present research would entail the identification of other organizational practices such as accounting for their time on time sheets, providing greater autonomy on the job, or having them work in self-managed teams that might make the noneconomic aspects of work more salient and therefore cause individuals to rely more on nonmonetary criteria in evaluating their happiness.

A final limitation of the current research is that we have considered an organizational practice, hourly payment, that often tends to be associated with lower status

work, although we should note that the technical contractors (Evans et al., 2004) earned high hourly wages and were very well educated, and our random samples contained a wide range of people and occupations. Nonetheless, it is important to extend our argument to organizational practices that may induce economic evaluation but are also prevalent in higher status jobs. One such candidate for further study would be billing and/or accounting for time at work, a practice considered by Yakura (2001) and Kaveny (2001). Lawyers are highly compensated, and lawyers who bill their time in corporate settings typically earn considerably more income than their non-billing counterparts. In a survey of lawyers in Calgary, Canada, Wallace (2008) found evidence quite consistent with our findings for the effects of hourly payment. Specifically, respondents who were members of firms that billed time exhibited a significant positive correlation between their incomes and the SWLS, one of the scales of subjective well-being we used in Study 4, whereas lawyers who did not bill their time had a nonsignificant correlation between their incomes and the SWLS. Wallace's results are consistent with our arguments because billing is also a practice that makes the economic value of time salient.

Implications for the Study of Well-Being and Organizational Behavior

We began our research with the observation that individuals' organizational experiences that might affect how they make decisions and judgments even in non-work domains have been more or less ignored by those studying the connection between money and happiness. Proceeding from the theoretical concepts of salience, the literature on focalism, and recent research documenting a connection between hourly payment and economic evaluation, we found that how one is paid can moderate the relationship between income and happiness. Hourly payment is an important organizational pay practice because more than half of the U.S. population is paid by the hour (Mellor & Haugen, 1986) and the proportion of the U.S. workforce paid by the hour has actually been increasing (Hamermesh, 2002). Hourly payment is, however, less common in many other countries including some in Western Europe (e.g., Hamermesh, 2002, p. 665). The prevalence of hourly pay or, for that matter, billing time by the hour or other organizational practices that affect the salience of a connection between time and money is therefore a reasonable candidate for beginning to better understand cross-national differences in the determinants of happiness and also in preferences for work and leisure, as well as changes in individual countries over time as such practices vary.

We have argued that the organizational arrangements that make the connection between time and money, and the opportunity costs of time, more or less salient—arrangements that can promote a commodified understanding of both time and what it means to be happy—have been largely overlooked in studies of what affects subjective well-being. Because so much of an individual's adult life involves work and, therefore, entails exposure to organizational practices, it is important to consider organizational experience as individuals may come to learn in institutionalized settings how to think about money, time, and their relationship to happiness.

CONCLUSION

The present research highlights the role that organizational experiences and management practices can play in affecting the evaluation of happiness. Although the decision-making literature on focalism has emphasized fundamental biases and the influence of subtle situational manipulations, the priming literature has focused on culture, values, personality orientations, and frequent priming within a laboratory context to demonstrate how knowledge can be made chronically or situationally accessible. We have used these psychological perspectives to examine how individuals' naturally occurring exposure to organizational practices can prime different modes of evaluation and choice. Since much of our day-to-day lives are lived within organizations and are subject to various organizational practices of payment, evaluation, and surveillance that can prime different ways of thinking—such as about the monetary value of one's time—it is important for psychology to consider the broader context in which people live and work in order to gain a better understanding of the determinants of happiness and subjective well-being as well as other similar phenomena.

NOTES

1. Although the item asking about overall happiness was also asked in other waves of the General Social Survey (GSS), no other panel contained this survey item along with a measure of hourly status. Additionally, hourly status was not a harmonized variable in the cross-national collection of GSS data.

2. This respondent listed an income of \$360,000. Nevertheless, including this data point did not influence the statistical significance of any of the three-way interactions reported in the results.

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