

WHEN DOES MONEY MAKE MONEY MORE IMPORTANT?

SURVEY AND EXPERIMENTAL EVIDENCE

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The authors investigate how the amount and source of income affects the importance placed on money. Using a longitudinal analysis of the British Household Panel Survey and evidence from two laboratory experiments, they found that larger amounts of money received for labor were associated with individuals placing greater importance on money; but this effect did not hold for money not related to work. The longitudinal survey analysis demonstrated these differential effects of the source of income on money's importance while holding constant stable individual differences. The experiments provide causal evidence that the source of income has an effect on the importance of money as well as on the effort expended to earn more money. The authors' results suggest that, even as individual differences in the importance placed on money may affect peoples' income, depending on its source, income can also affect the importance people place on money.

The strange part is, the more I made, the more I got preoccupied with money. When suddenly I didn't have to think about money as much, I found myself starting to think increasingly about it. Money corrupts the mind.

—Daniel Vasella, CEO of Novartis (quoted by Leaf, 2002: 109)

The importance people place on money affects numerous aspects of work and labor. Choices among jobs that vary on multiple dimensions depend on the relative importance the chooser places on money compared to other job attributes such as the nature of the work itself (e.g., Shapira 1981), and workers self-select into job types that suit their preferences (Clark 2005). The fundamental decision determining the supply of labor—how much leisure to forego for income—depends not just on the exchange rate between time and money but also on how important money is to the person making the decision (e.g., Lazear 1991, 1998). The common use of

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monetary incentives to affect behavior and motivation in the workplace is dependent on the importance the employee places on money (Lawler 1981).

In this article, we explore whether the amount of money and its source affects the importance people place on money. We hypothesize that because money is not just a medium of exchange but can also signal someone's competence, money that comes from labor and that therefore signals competence can make people value money as more important. Our analysis helps shed light on the paradox articulated by the opening quote—even though having more money should make money less focal, money from labor makes money *more* important because of its tie to one's sense of competence.

Background and Hypotheses

It is possible to observe a connection between income and the importance people place on money from several different theoretical perspectives. First, there may be relatively stable individual differences in people's preference for money that, in turn, affect their behavior in ways that produce a correlation between money's importance and income. The various scales measuring the importance of money (e.g., Tang 1995; Mitchell and Mickel 1999) proceed from the implicit assumption that the importance placed on money is a meaningful and reasonably stable individual difference. Individuals who value money more presumably pursue its acquisition more vigorously (Cable and Judge 1994). Therefore, these fixed individual differences in the importance placed on money can create differences in income (Bertrand and Mullainathan 2001). This perspective is consistent with the idea that individuals who place greater importance on money receive greater utility from its acquisition, but is fairly agnostic about the diminishing marginal utility of income beyond that it is person-specific.

A second perspective views money as an instrument for obtaining biologically relevant incentives (Lea and Webley 2006). Because there are limits to biological needs, this conceptualization of money logically leads to the idea of satiation and diminishing marginal utility (Schwartz and Robbins 1995), where the motivation to acquire a resource decreases as the quantity one has increases. This perspective implies a tight coupling between the importance placed on money and the utility received from income, which at some point necessarily involves the diminishing marginal utility of income. This perspective implies that the more money one receives, the less overall importance should be placed on money. At a minimum the overall importance placed on money should remain the same.

Neither of these perspectives would explain how increases in income might cause an individual to place greater importance on money, where the importance placed on money generally as a value is decoupled from utility. But some psychological theories describe how individuals can come to place greater importance upon objects or attributes they happen to have. For instance, the endowment effect (Kahneman, Knetsch, and Thaler 1991) describes the process by which individuals come to value an object more simply

by the mere fact of owning it. While the endowment effect does not operate for objects held only for their exchange value (e.g., money), there is evidence that individuals tend to value an object even more to the extent that it is associated with the self (Morewedge, Shu, Gilbert, and Wilson 2009). For example, George Loewenstein and Drazen Issacharoff (1994) showed that individuals receiving an object due to their skill valued it to a much greater extent than when receiving the same object due to chance. Moreover, the human motive to self-enhance can further induce people to confer greater importance upon attributes that place them in a positive light and to value more positively qualities or things that they believe they possess more of (Taylor and Brown 1988; Sedikides and Strube 1997; Johns 1999).

When applied to money, whose value is generally presumed to *not* depend upon where it comes from or the conditions under which it was obtained (Foa and Foa 1975), these psychological theories provide an argument for source dependence—that the manner in which money is obtained can affect its importance. Indeed, Thaler (1985, 1999) introduced the concept of the mental accounting of money to begin to describe various types of violations of the principle of fungibility, where among other things the source of money affects how it is used. For example, money earned from one's regular income is spent differently from money won in a lottery (Thaler and Shefrin 1981; Shefrin and Thaler 1988). This research is consistent with psychological perspectives suggesting that where money comes from matters, possibly not only in how it is spent but even in how it is valued.

We elaborate on the mental account research by considering how the source of money might influence the overall importance placed on money. One reason the source of money may be critical is that in addition to its economic value—what it can buy and how it can be used—money can also have symbolic value that may affect the recipient's perception of the importance or significance of money (Mickel and Baron 2008). Accordingly, money can become even more important than its economic value alone would dictate. For example, Loewenstein and Prelec (1991) have shown that individuals prefer increasing wages over time, even in circumstances in which flatter or decreasing wage profiles offered greater net present economic value. Such preferences parallel the greater job satisfaction experienced with actual increases in workers' increasing pay profiles over time (Clark 1999). George Loewenstein and Nachum Sicherman (1991) argued that the preference for increasing wages could derive from the implicit association individuals make between labor income and competency. They noted, "workers may associate wages with productivity and derive utility from a feeling of mastery when wages increase" (*ibid.*: 69). Their empirical results showed that the importance individuals placed on receiving increasing income over time was significantly stronger when the income was associated with labor than when the money was unrelated to effort—in the case specific to their research, from inherited apartment rents. This research suggests that the source of money matters for money's importance, an insight that has not

received much subsequent research attention in efforts to understand why people might value money more or less.

Depending upon how money is received, it can be a clear signal of an individual's competency on a task (Deci and Ryan 1985). Moreover, it is likely that people generally believe that "the level of pay . . . communicates how much the organization values an employee and thus affects employee . . . self-esteem" (Gardner, Van Dyne, and Pierce 2004: 307). Consequently, receiving more money should make money more important (or in parallel fashion, receiving less money should make money less important) as individuals seek to feel good about themselves. But it should do so primarily for money that is directly associated with the efforts of the self as it signals competence (or its absence)—money from an individual's labor. Thus, we hypothesize that higher amounts of money received from labor will increase the importance placed on money, while the same amounts of money from other sources not directly linked to effort will not. In fact, because financial needs are generally relatively fixed, it is quite possible that money from sources that do not implicate the self's competency could make money less important from a satiation effect.

Empirical Strategy

In the three studies reported here, we examined whether receiving more money affects the importance people place on money and whether the source of the money affects this relationship. We tested the hypothesis that the more money received for a person's labor causes money to be more important, but money obtained in ways that do not implicate the self's sense of competency will not make money more important. Our empirical strategy was based on the use of both longitudinal survey data and experimental data. The survey data allowed us to initially test our hypothesis in an externally valid context by contrasting two different forms of income (labor income per hours worked versus investment income). We used a longitudinal survey that permitted us to see how income is associated with the importance people place on money when the effects of stable individual differences are held constant. The two laboratory experiments allowed us to test the potential causal connection between the acquisition of money both on the importance of money and the effort one is willing to exert to earn more of it.

Study 1: Survey Data on the Importance of Money

Our first objective was to explore the hypothesized relationships using longitudinal data that would permit us to hold constant an individual difference account for the results we observed and to be able to examine the effect of changes in the amount of money received on changes in the importance of money over time. The survey data come from the British Household Panel Survey (University of Essex 1991–2009), an annual household

survey started in 1991 that interviews each person in the household who is over sixteen years of age. The survey is nationally representative of households in Britain and the same individuals are reinterviewed in successive waves, in which all adult members who split off into new households are also reinterviewed. Extensive documentation of the survey may be obtained from <http://www.iser.essex.ac.uk/ulsc/bhps>.

The outcome variable we sought to explain was individuals' ratings of how important "having a lot of money" was to them on a 1 (*Not important at all*) to 10 (*Very important*) scale. Our independent variables were different sources of income. To examine the amount of labor income per hour worked (how much money they earned), we created an estimated hourly wage rate by dividing annual labor income by their customary hours worked per week multiplied by 52 weeks. Of course, we could have used total income and statistically controlled for the number of hours worked, which would be analytically equivalent but not as intuitive to interpret. Note that this measure reflects the amount of money people received considering the number of hours expended earning it. If money is symbolically important as a measure of how much a person feels valued and recognized, that signal would be best observed in the income earned per unit of time—a reasonably unambiguous measure of the relative worth of the labor of a particular individual.¹

Not all sources of money implicate the self to the same degree or send the same signals about competence and worth. In particular, we also analyzed another source of income that was not a consequence of employer decisions. The data set has information on investment income ("Income from rents, savings and investments"). For our purposes, investment income provides an interesting and important contrast in exploring the effect of the amount of money received on the importance of money.

Method

Given that our goal was to hold constant time-invariant individual differences, we used a fixed-effects analysis to examine the effect of the amount of money received on the importance of money over time. We used three waves of data collected in 1998, 2003, and 2009, as these were the only times when respondents were asked about the importance of money. We limited our initial sample to the 16,170 individuals who responded to at least two of the three waves. We employed the fixed effects estimator over these waves, each separated by five years, to test whether different types of income were differentially associated with the importance of money. The estimation procedure takes out all time-invariant heterogeneity, including unmeasured individual differences, that exists within the individual and results in a

¹Treating hours worked and total labor income as separate predictors resulted in labor income and investment income having similar coefficients with no differences in the statistical significance for the results reported here.

measurement of the effect of income on the importance of money after controlling for the variation that exists within an individual. This model improves on the estimates of a traditional cross-sectional regression when there are unmeasured explanatory variables that are constant over time. Listwise deletion to include only observations that had complete responses on both the key independent variables and the dependent variable resulted in a sample of 8,815 for our analyses.

We also controlled for a set of factors that might plausibly affect the importance of money or the relationship between labor and investment income and the importance of money over time. We controlled for the total outstanding loans on all the property respondents (or their household) owned and the total number of owned discretionary possessions (i.e., the total composite number of the following items respondents indicated they owned: color TV, VCR, freezer, washing machine, tumble dryer, dish washer, microwave oven, home computer, CD player, satellite dish, cable TV, and telephone). For life factors that might affect money's importance, we controlled for marital status and the number of individuals in the household over time. Controlling for these potentially time varying factors, some of which directly measure uses of income, permitted a stronger test of whether any observed impact on the importance of money had a psychological underpinning related to the self or merely reflected changes in people's economic circumstances. Furthermore, the fixed-effects regression controls for stable individual differences such as gender or stable personal values and predispositions, allowing the analysis to focus on within-person changes over the period of analysis.

Results

To examine whether labor income per hour or investment income were positively associated with the importance of money after controlling for the time-invariant variation that exists within each individual, we conducted a fixed-effects regression analysis. Column 1 of Table 1 provides the summary statistics for the key variables in the model. Column 2 of Table 1 (Model 1) displays the fixed-effects coefficients indicating the effects of hourly labor income and investment income on ratings of the importance of money.

The amount of hourly labor income was a significant positive predictor of the importance of money, $b = .46$, $t(5076) = 2.01$, $p = .044$ in the longitudinal analysis. This indicates that the labor income of respondents is positively correlated with the importance of money after controlling for individual fixed-effects. By contrast, the amount received from investment income over time was negatively related to the importance of money, $b = -.03$, $t(5076) = -3.11$, $p = .002$. To the extent that investment income provides a good comparison condition for income not directly linked to personal effort (Loewenstein and Sicherman 1991), this result is consistent with the argument that receiving money in a manner unrelated to one's competency at work would be unlikely to make money more important. Indeed, if money

Table 1. Fixed-Effects Regression Predicting the Importance of Money in Study 1

<i>Variable</i>	<i>Summary statistics</i>	<i>Model 1</i>	<i>Model 2</i>
Importance of money	6.45 (1.84)		
Labor income per hour	£10.07 (9.61)	0.46** (0.23)	0.45** (0.23)
Investment income	£480.74 (3,279.38)	-0.03** (0.01)	-0.03** (0.01)
Outstanding loans on property	£40,605 (66,319)		-0.05 (0.37)
Discretionary possessions	9.06 (1.65)		0.02 (0.02)
Married	62% (0.49)		0.07 (0.07)
Household size	2.99 (1.24)		0.05** (0.02)
N		8,815	8,815
<i>Fixed effects R²</i>		0.70	0.70

Notes: £ values are nominal. Estimates are unstandardized coefficients with standard errors in parentheses for linear fixed effect regression analysis. The units used to generate the coefficient estimates in Models 1 and 2 for the variables (a) labor income per hour are in (£100), (b) investment income are in (£1,000) and (c) outstanding loans on property are in (£1,000,000).

**Significant at the 0.05 level.

from investments is allocated explicitly for savings or retirement targets rather than spending, the overall importance of money might very well decrease as those targets are met or exceeded.

To see whether other relevant time-variant factors might explain or otherwise change these effects, we reran the analysis including other time-variant covariates in the regression equations. Specifically, we controlled for total outstanding loans on all the property respondents (or their household) owned, the total number of owned discretionary possessions, marital status, and the number of individuals in the household. The results of this analysis are reported in Table 1 (Model 2). Even with these controls included, there continued to be a positive relationship between labor income per hour and the importance of money, $b = .45$, $t(5072) = 1.96$, $p = .050$; and a negative relationship between investment income and in how important money was to the survey respondents in this longitudinal fixed-effects analysis, $b = -.03$, $t(5072) = -3.08$, $p = .002$. Indeed, perhaps due to the variance constrained by a fixed-effects analysis, none of the other control variables significantly affected the importance of money ratings above and beyond stable individual differences and the main independent variables other than the household size, which exhibited a positive relationship, $b = .05$, $t(5072) = 2.07$, $p = .039$, a result that makes sense in that larger households would have greater material needs and might find money more important as a result.

Study 2: Ratings of the Importance of Money Experiment

With nationally representative longitudinal data, Study 1 provides some degree of external validity for the idea that labor income is associated with the importance of money. Moreover, the potential contrasting effects of income depending upon whether it came from labor or investments is an interesting

test of whether the source of money matters in terms of the importance placed on money. Moreover, because the analysis holds constant the stable individual differences that might be adduced to account for this relationship, it is an especially powerful test. It is difficult, however, to assume that change in income is exogenous, and thus this survey data is unable to completely assess causality or fully rule out alternative explanations. Therefore, we developed an experimental paradigm that allowed us to manipulate both the amount of money acquired and its source to demonstrate the potential causal effects of these factors on the importance of money.

We wanted to experimentally manipulate income on a smaller scale and observe whether the amount of money received had an effect on the importance of money in a manner that is theoretically consistent with the contrast of labor income and investment income in the longitudinal survey data. To this end, we explicitly manipulated whether or not the source of the money received derived from the participants' labor and, hence, directly implicated one's sense of competence. We could think of no direct experimental analogue to investment income from the survey; however, if the critical aspect is whether or not the money reflects the effort of an individual's work, we thought that, if people received money by random chance, that money would not have the same implications for one's sense of competence, and therefore, would not carry additional symbolic value that would affect participants' ratings of the importance of money.

Method

Seventy-one students from a large Canadian university were recruited from a course credit pool in exchange for a one-hour course credit ($n = 35$) and from a separate paid participant pool in exchange for a five-dollar show-up fee ($n = 36$). Fifty participants were female and the average age was 21.96 ($SD = 5.02$). Upon arriving at the laboratory session, each participant sat at a separate workstation where they could not observe the activities of other participants. After signing a consent form, participants immediately received either their course credit certificate or the promised show-up session participation fee, depending upon the pool they were drawn from. Participants were then presented with an instruction sheet describing how to make an origami paper plane along with a sheaf of 20 sheets of origami paper. The experimenter demonstrated step-by-step how to make an origami paper plane, and the participants followed along and created their own paper plane to keep at their workstations as a model. Participants were then asked to make as many high-quality origami plans as they could in five minutes.

After the five minutes had elapsed, the experimenter instructed participants to stop making planes. The experimenter walked over to each individual workstation with a clipboard and proceeded to circle values on a sheet. Then the experimenter left the room and returned several minutes later with a sealed envelope. Regardless of the experimental condition, each participant received a single performance sheet (ostensibly a sheet the

experimenter had filled out after observing the origami paper planes produced) that had ratings on two dimensions: “Quality of your paper planes” and “Quantity of your paper planes.” Each dimension had a 1 (*Poor*) to 5 (*Very Good*) scale, and *all* participants received a value of 5 for both dimensions. Thus, all participants received *identical* feedback for their performance during the five-minute task, and all participants received feedback showing that their performance was as good as it could be given the ratings available.

The envelope the participants received also contained a monetary sum and a one-sentence description of why the respondent was receiving this amount. The amount of that sum and its stated purpose constituted the manipulated variables of the study. It is important to note that the envelopes were made up before the sessions and the experimenter was blind to participants’ assignment to experimental condition. By delivering the manipulation in this manner, we were able to ensure participants did not know the feedback or money received by other participants until after they had responded to the dependent variable.

Because participants were drawn from both a course credit and paid participant pool, this factor was explicitly analyzed to assess whether the experimentally manipulated variables had similar effects for both subject populations. Enclosed in the envelope was either one dollar or ten dollars. In this way we were able to precisely vary the amount of money received. This money was unexpected for all participants, who thought they were participating either for course credit or for a five-dollar session participation fee.

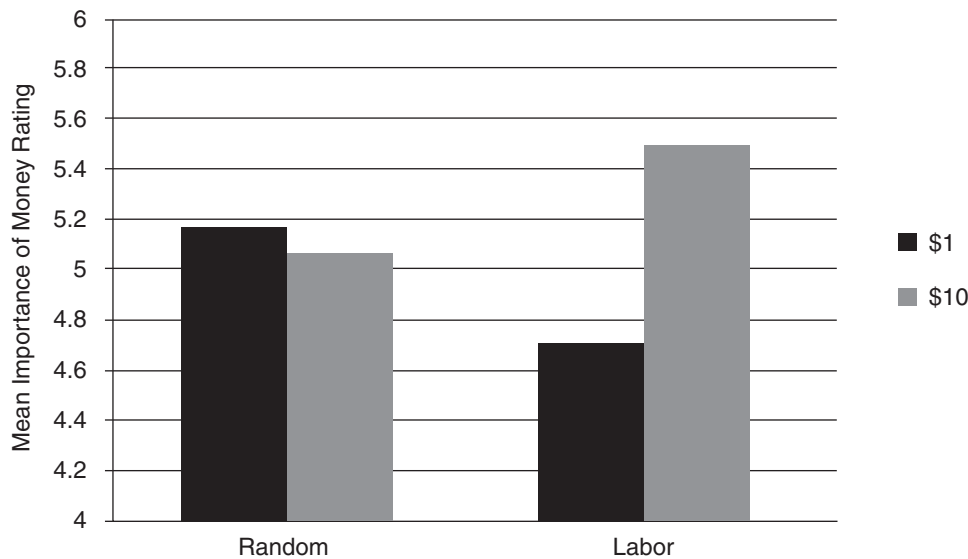
Accompanying the performance sheet was a single sentence describing the reason the money was included in the envelope. In the control condition, participants were told they had received this money randomly. “Due to a coin toss before the lab session, you were randomly selected to receive \$_____.” In the earned condition, participants were told they had received this money based on their work. “Based on the quality and quantity of the origami paper planes made in this session, you have earned \$_____.” In the underlined space for both conditions, the monetary sum was written in by hand that corresponded to their particular experimental condition (either one dollar or ten dollars).

Immediately after opening the envelope, participants were asked to fill out a brief questionnaire where they responded to the four-item value importance of money subscale (Mitchell and Mickel 1999). Specifically, participants rated their agreement with four statements (“I value money very highly,” “Money is important,” “I believe the more money you have, the happier you are,” and “I daydream about being rich”) using a 1 (*strongly disagree*) to 7 (*strongly agree*) scale ($\alpha = .77$). The final questions on this short questionnaire collected basic demographic information (gender and age).

Results

We conducted a 2 (pool: research credit versus paid) \times 2 (amount: one dollar versus ten dollars) \times 2 (source: labor versus random) analysis of variance

Figure 1. Importance of Money as a Function of Experimental Conditions in Study 2



for participants' rating of the value importance of money. The only effect to emerge as statistically significant was the source \times amount interaction, $F(1, 61) = 4.56, p = .037$. Figure 1 depicts the cell means for the interaction.

We hypothesized that linking a larger sum of money to one's effort would cause individuals to place greater importance on money. To explore the nature of the observed interaction, we conducted follow-up analyses separately within the two sources of money conditions. Participants who received ten dollars randomly did not differ in the importance of money ($M = 5.07, SD = 1.32$) from their counterparts who had received one dollar randomly ($M = 5.17, SD = 1.16$), $F(1, 28) = .83, ns$. But participants who received ten dollars because of their labor rated the importance of money as significantly higher ($M = 5.50, SD = .84$) than participants who received one dollar ($M = 4.71, SD = .88$), $F(1, 37) = 8.20, p = .007$. One interpretation of the low value of the importance of money in the one-dollar labor condition is that small sums of money do not signal high levels of competence.

It is important to note that prior work both in the field and in the laboratory that manipulated the amount paid for performance shows that small monetary payments are often perceived as worse than no payment at all and have opposite effects on performance than high sums of money or no money at all (Gneezy and Rustichini 2000). Viewed in this context, the ten dollars labor payment is the only condition where greater competence is clearly signaled and receiving one dollar does not signal greater competency than the random conditions above and beyond the common positive feedback all participants received on their performance. To confirm the hypothesis that receiving a high amount of money for labor is likely to increase the importance placed on money, we conducted a planned contrast

(3, -1, 1, -1), and this revealed that participants who received ten dollars for their labor ($M = 5.50$, $SD = .84$) rated money as more important than their counterparts in the other conditions ($M = 4.96$, $SD = 1.11$), $t(67) = -1.95$, $p = .056$. The results of this experiment replicated the findings from labor income in the field data in Study 1. Specifically, receiving more money makes the importance of money greater, but only for people who believe this money comes from the quality of their labor. When money was received randomly, the amount received had no effect on the importance of money.

Study 3: Effort to Earn More Money in Response to Piece-Rate Pay Experiment

While the design of Study 2 examined the effect of receiving varying amounts of money on participants' ratings of the importance of money, Study 3 tested a direct behavioral manifestation of placing more importance on money. Motivated behavior derives, of course, not just from how much importance people place on a reward but also from their expectancies that their behavior will result in their receiving outcomes that they value (Lawler 1981). Therefore, in our experimental work task, we made payoffs for effort transparent and examined changes in participants' behavior in a practice session where no monetary payoffs were operating in comparison to a payment session where monetary payoffs were operating explicitly in a piece-rate manner. We directly compared the change in effort across conditions where participants had received payments of ten dollars for their previous effort to their counterparts who received the identical sum of money randomly. If people place greater importance on money earned from a work task, it follows logically that they should be willing to expend more effort to obtain it.

Method

Forty-one students from a large Canadian university participated in exchange for a five-dollar show-up fee. Thirty-one participants were female and the average age was 21.49 ($SD = 2.22$). Participants engaged in a modified version of the experimental paradigm employed in Study 2. Once participants signed a consent form, they immediately received their five dollars for participating in the laboratory session. After receiving this money, participants were presented with an instruction sheet describing how to make an origami paper plane along with a stack of 50 sheets of origami paper. With the participants following along, the experimenter walked step by step through how to make a plane so that the study participants had a practice plane to keep on their workstation as a model. Participants were then asked to make as many high-quality origami planes as they could in five minutes. Participants were also told that there would be an opportunity to be paid based on the quantity and quality of the paper planes they made and that this payment would be separate from the fee for participating in the study.

After the five-minute session had elapsed, the experimenter instructed participants to stop making planes and walked over to the participant's workstation and wrote down the number of planes they had built on a clip board that was not visible to the participant. The experimenter then left the laboratory room and came back with a ten-dollar bill sealed in an envelope. Using the procedure described for Study 2, participants received performance feedback and also an explanation of why they had received this additional money. In this instance, every participant received the identical amount (ten dollars) and as in the first experiment, were told either they had received the money because of the quality of their labor or because of a random draw. The experimenter then removed the origami paper planes by putting them into an enclosed cardboard box.

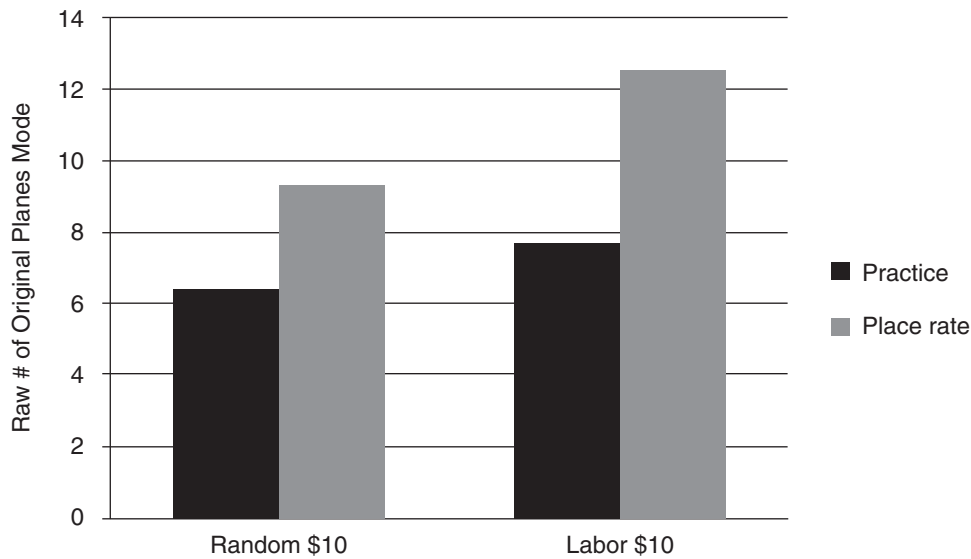
After the workstation was cleared, the experimenter told the participants that they would have another five minutes to make origami paper planes and that they would receive one dollar for each one made. Participants were asked to make origami planes that were the same as they had done in the first five-minute session. Once the five minutes had elapsed, the experimenter then marked down the number of successful origami planes made and paid the participants additional money based on how many they had made. To obtain a behavioral indicator of the importance of money, we examined the increase in the number of origami planes made from the first session compared to the second session, during which all participants were paid a piece rate of one dollar per origami plane. We examined the change in number of planes made to implicitly control for individual differences in the proficiency of making origami planes.

Results

Participants made fewer origami planes during the five-minute session before the manipulation ($M = 6.95$, $SD = 4.03$) than in the five-minute session after the manipulation when they were compensated at a rate of one dollar per origami plane ($M = 10.66$, $SE = 5.63$), Wilks' $\lambda = .317$, $F(1, 39) = 84.15$, $p < .001$. This difference shows that the piece-rate payment system did, as expected, affect peoples' levels of effort on the task. Note, however, that there was significant factor \times condition interaction, Wilks' $\lambda = .884$, $F(1, 39) = 5.12$, $p = .029$. Figure 2 depicts the means for the raw number of origami plans made in the initial five minutes where no payment was received (practice) and the latter five minutes where participants received one dollar for each origami plane constructed (piece rate). Participants in the condition where they believed they had received additional money because of their labor responded by making significantly more planes when confronted with a piece-rate payment scheme than did participants who believed they had received the money randomly but who faced the identical reward circumstances.

Despite the fact that the payoff for each additional origami plane made was the same across the two conditions, we observed evidence that participants

Figure 2. Effort as a Function of Experimental Condition in Study 3



behaved as if receiving more money was of greater importance to them when they received the ten dollars based on their prior labor. Although the piece-rate system in the second round was clearly stated to all participants, it is possible that knowledge of the opportunity to be paid based on the quality and quantity of the paper planes may have been interpreted differently across conditions. But because participants had no such knowledge in the previous experiment, this idea cannot explain the results across studies. Note that the results of both studies provide converging evidence that receiving a larger amount of money for labor increases the attitudinal and behavioral importance placed on money.

Discussion and Conclusion

Because the importance of money can affect people's decisions ranging from job choice to how much to work and is, therefore, substantively significant in affecting worker behavior, we investigated the conditions under which receiving more money changes the importance placed on money. We found that when people were paid for their labor, the money they received could make money more (or less) important because the payment is symbolically significant in its signal of an individual's competence. The survey data explored the external validity of our hypotheses by examining the effects of naturally occurring variations over time in the amounts of income on respondents' ratings of the importance of money. Contrasting effects were observed depending upon whether the amount of income came from a source that directly implicated a person's sense of competence at work (labor income) or one that did not (investment income). Experimentally investigating the causal effects of varying amounts of money and its source,

Study 2 showed that receiving more money (ten dollars versus one dollar) caused participants to rate money as more important, but only when they believed they received the money as a consequence of their labor and not when they received the money by chance. In Study 3, in which people had an opportunity to receive more money in a piece-rate payment system, the results showed those who had been experimentally assigned to receive money because of their labor subsequently worked harder to earn more money than did participants who received the identical amount of money by chance.

By demonstrating that the amount as well as the source of income are crucial for understanding how important money is to individuals, the present findings extend and elaborate upon a mental accounting literature that has consistently reported that people do not experience all dollars as the same. In addition, the fact that the acquisition of more money from people's labor caused people to place greater importance on money supports theoretical perspectives emphasizing the symbolic value of money as distinct from either instrumental or individual difference accounts.

Limitations and Directions for Future Research

Our arguments and findings highlight several fruitful areas for future research. While we have focused on the role of perceived competence as one plausible mechanism through which money can make money more important, it is important to acknowledge that many other factors may contribute to such a relationship. In addition to worth and competency, the symbolic meaning of labor can also encompass achievement, appreciation, recognition, status, and respect (e.g., Mickel and Baron 2008). Although these implications of what money means for the self often overlap and may not be easily disentangled, they all constitute facets of symbolic meaning that can augment the perceived importance of money.

We have presented our results in terms of the symbolic value of money that signals greater competence, but a number of explanations for the labor income and importance of money link are worthy of consideration. Theories of motivation crowding (e.g., Deci and Ryan 1985; Frey and Jegen 2001) that conceptualize intrinsic and extrinsic motivation in a zero-sum manner predict that larger payments for labor can crowd out subsequent intrinsic motivation for the task or job. While our symbolic perspective emphasizes the value placed on money more generally rather than the intrinsic motivation specific to the task or job, it is possible that participants' greater extrinsic motivation for the task or job generalizes to the value placed on money more broadly. Similarly, theories of cognitive dissonance (Festinger 1953) and effort-justification (Aronson and Mills 1959) that describe the motivation to bring preferences in alignment with behavior may also potentially play a role in the labor income and importance of money link. It is important to note that in our studies we made sure effort was held constant. In the survey data we adjusted labor income by the number of hours worked; and,

in the experiments, random assignment assured that task effort before the manipulation did not vary across conditions. Moreover, in the experiments all participants received additional money and were not aware of other conditions that would provide the requisite dissonance necessary to induce greater (lesser) valuation of money's importance. Nevertheless, it is possible that the link between labor income and importance of money reflects a form of adaptive preferences (e.g., sour grapes, Elster 1983).

In addition, many other potential factors may influence the importance people place on money received from their labor. For instance, it is very likely that the amount of money one's peers receive (or are perceived to receive) will influence the importance individuals place on money due to experience of high rank (Clark, Masclet, and Villeval 2010). Also, individuals select into jobs where the link between pay and performance may vary quite dramatically (Cadsby, Song, and Tapon 2007; Eriksson, Teyssier, and Villeval 2009). We would expect that experience in jobs where there is a tight link between pay and performance would amplify the relationships we have observed in our studies because in those settings, the signaling value of money would be stronger. By contrast, in jobs where there is decoupling of pay and performance, the relationships between money and its importance would be attenuated because the amount of money received has less informational value about worth and competence.

Theoretical Implications

Signals sent by organizations to individuals about their work competence can be and often are mixed and murky, but the amount of money received for labor appears to be a transparent and salient signal that imbues money with greater symbolic value. In this way organizations don't simply pay individuals, but they affect how much individuals value money itself.

This insight has several theoretical implications for the study of labor supply and organizational compensation. The fundamental assumption made in labor and personnel economics (e.g., Lazear 1991, 1998) is that an individual's willingness to supply labor is a function of the wages offered as well as the person's utility for money, leisure, and other non-pecuniary rewards provided by working. This theory relates preferences for work to supply curves that are understood to be a function of both changes in purchasing power (income effects) and changes in the opportunity cost of working (substitution effects) (Samuelson 1955: 535–36). The precise weighting of attributes is unique to each individual, but generally the preference for additional money relative to leisure time is theorized to be stronger at lower rather than higher incomes because at higher incomes, the income effect dominates the substitution effect (e.g., the backward bending labor supply curve). Once individual differences, for instance in opportunities and in tastes, are accounted for, wages—the amount of remuneration offered for work—are presumed to affect individual's assessments of how much to work.

Our findings suggest that labor supply preferences may be more dynamic than has been previously acknowledged or modeled and may be affected both by the income people receive and whether and how that income has implications for one's sense of competence. In that sense, very much as Gardner et al. (2004) have implied, all organizational rewards are not equal. Although our field and experimental findings obviously cover a relatively circumscribed range of income and monetary rewards, it is nonetheless interesting and important that, for a nationally representative random sample, we observed evidence that—counter to either accounts emphasizing individual differences in valuing money or instrumental accounts, in the case of money earned via labor—the more money someone earned, the more important money became.

Our research also has important implications for the study of organizational compensation. First, compensation systems are presumed to be most successful when the type of incentive system and the incentives offered match an individual's need or desire for money (e.g., Cable and Judge 1994; Gerhart, Minkoff, and Olsen 1995). For instance, Mickel, Mitchell, Dakin, and Gray (2003) found that the importance of money was related to preferences for being in profit versus nonprofit organizations. To the extent the importance of money is influenced by changes in income, matching individual preferences with compensation systems becomes a somewhat more dynamic and reflexive process. As Besser (1995) and others have suggested, what organizations do affects the importance people place on money. In that sense, organizations to some extent create the motivational environment in which their people operate. This dynamic property of how incentive effects unfold over time deserves much additional study. The idea that money can make money more important leaves open the possibility that companies that emphasize large monetary rewards condition employees to respond primarily to money and create environments where, as money becomes more important to employees over time, they have to continually ratchet up the amount of money offered. One of the intriguing distinctions of money from other resources like time and promotions is that, while these resources are bounded (there are only 24 hours in a day and no higher position than the highest position), one can always seek to acquire more money.

The results also speak to the apparent mystery of ever-rising chief executive compensation levels and suggest why compensation amounts that might strike some as far beyond any individual's instrumental needs are nonetheless not perceived that way by the recipients. If money earned from labor does indeed make money more important—and obviously much additional research on the determinants of how much importance people place on money remains to be done—then it is reasonably straightforward to imagine a form of rat race, and not just one in which more money is desired so that a person can stand above peers in a social comparison process (e.g., Frank 1985, 1999). The rat race we are describing is a situation in which the more money someone has, the more important having money becomes because of the symbolic message of competence conveyed by higher compensation.

This is precisely the sentiment expressed in this article's epigraph quoting Daniel Vasella. While it is not possible to say whether the greater preoccupation with money comes precisely when the additional instrumental value of money to further satisfy biological needs is diminished, it is certainly a phenomenon worthy of further research.

Finally, the present work has important implications for employees and society. Kasser and Ryan (1993) and Deckop, Jurkiewicz, and Giacalone (2010), among others, have shown that financial preoccupations distract people from focusing on the intrinsic facets of life that can be most satisfying. To the extent that higher levels of income further focus people on the extrinsic reward of acquiring more money, higher levels of financial well-being can have two countervailing effects: a positive effect of making people's lives materially easier and better, and a negative effect on their happiness caused by wanting ever more and becoming even more focused on extrinsic rewards. These countervailing forces could help explain the relatively small relationship between changes in income and changes in happiness at either the individual or societal level. The extent to which each of these effects prevails and under what conditions are important factors that can provide a better understanding of people's happiness and well-being.

Our research suggests that it isn't just the importance of money that causes us to pursue its acquisition. It is also the case that increases in labor income can influence the importance we place on money, particularly when changes in income convey signals of competency. To the extent that organizations highlight the importance of money, they may come to influence societal values in ways that have not been previously considered. It seems a worthwhile goal for research to help our understanding of how pay practices influence our values and choices both within and outside organizational contexts.

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