Preference for increasing wages: How do people value various streams of income?

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Preference for Increasing Wages: How Do People Value Various Streams of Income?*

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Abstract

Prior studies have found that subjects prefer an improving sequence of income over a constant sequence, even if the constant sequence offers a larger present discounted value. However, little is known about how these preferences vary with the size of the wage payments. In each of our three studies, we find a relationship between the preference for increasing payments and the size of the payments. Further, our measure of the shape of the utility curve is not significantly related to this behavior. Our results roughly confirm an earlier theoretical prediction that the preference for increasing wage payments will be largest for payments which are neither very likely nor very unlikely to cover the cost of effort. Finally, consistent with the literature, we find mixed evidence regarding the applicability of these time preferences in domains other than money.

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1 Introduction

It is well known that in experimental settings, subjects can make choices which are consistent with a preference for increasing payments (Loewenstein and Sicherman, 1991). In particular, many people prefer an increasing sequence of payments over a constant sequence, even if the increasing sequence has a lower present value. However, little is known about how this preference varies with the scale of the income payments. Additionally, little is known about the preference over sequences of nonmonetary aspects of a job. To address these issues, we elicit preferences over sequences of wage payments and other employment characteristics.

In each of the studies which follow, we ask subjects for their preferences over sequences of payments. In these payment questions, each response item specifies payment in a particular year, where each sum to an identical amount. However, the response items vary in their rate of increase. We always offer a constant payment sequence and various increasing sequences, where the rate of increase is negatively related to the present value of that sequence. Therefore, the rate of increase in the chosen payment sequence is a measure of the strength of the preference for increasing payments.

We find that the preference for increasing income is increasing in the size of the income payments. We find that this choice is unrelated to our measure of the shape of the utility function. And consistent with the prediction made in Smith (2009a), we find that the preference for increasing wages is strongest for intermediate wages. In particular, we find that the difference between the preference for increasing sequences of money from wages and the preference for increasing sequences of nonwage money is greatest for intermediate values.

In Study 1, we elicit preferences for undergraduate economics students regarding income payment streams and hours required for a job. We find that the preference for increasing sequences of income is stronger when the payments are larger. We also find that subjects whose preference for increasing income varies with income also tend to have a relationship

between the preference for decreasing hours and the amount of hours required.

However, in Study 1 we cannot distinguish between the preference for sequences of nonwage payments and the preference for sequences of income, which as Loewenstein and Sicherman (1991) have determined, can be different. Therefore, in Study 2 we elicit preferences for sequences of money from undergraduate and graduate psychology students, where the payments are from two possible sources. In one treatment, we describe the payments as income from wages. In the other treatment, we describe the payments as money sent by a relative who has won a lotto jackpot. We find that the difference between the two treatments is largest for intermediate payments. This finding roughly confirms the results in Smith (2009a), which predicts that the preference for increasing payments of income will be largest for payments which are neither very likely nor unlikely to cover the cost of effort, namely intermediate payments.

A possible explanation for the relationship between the degree of the preference for increasing payments and the size of the payments is that it is due to decreasing marginal utility of money. In order to test this possible explanation, in Study 3 we also measure the shape of the utility of money for our law student subjects. Specifically, we employ an Eckel and Grossman (2008) type measure of risk aversion. While we again find that the preference for increasing payments is related to the size of the payment, we find that this behavior is not related to our measure of the utility function. Further, unlike Study 1 we do not find agreement between the relationship between improving sequences and the values of the sequences in the domains of money and required hours.

2 Related Literature

Research has found that people have a preference for improving sequences of outcomes. This extensive body of research extends to monetary outcomes or nonmonetary outcomes, retrospective evaluations or prospective evaluations, and short or long time horizons.[1] For

[1] For instance, see Ariely and Carmon (2000), Chapman (1996a, 1996b, 2000), Chapman and Elstein (1995), Elster and Loewenstein (1992), Gigliotti and Sopher (1997), Guyse et. al. (2002), Hsee et. al. (1991), Hsee

instance, Loewenstein and Sicherman (1991) offered subjects a choice among payment profiles over 6 years. The payments within each payment profile summed to identical amounts however each varied the rate at which the payments were made. The choices included constant, decreasing, and increasing choices. Therefore, any subject with a positive discount rate should never prefer an increasing profile. Despite this, the authors found that many subjects preferred increasing payments. Additionally, the preference for increasing payments was particularly pronounced when the payments were described as "income from wages" as opposed to "income from rent." In our experiment, we deviate from the "income from rent" baseline measure because if the subject has prosocial preferences, the subject might not want to obtain an improving sequence of money by imposing a declining sequence on the person paying the rent. Therefore, in Study 2 we measure the baseline preference for increasing payments by describing the money as resulting from a large lotto jackpot won by a family member.

One goal of this paper, is to test the predictions of Smith (2009a). The paper models a decision maker who selects among prospective sequences of income payments where the decision maker has imperfect recall of the cost of effort. The decision maker exhibits a preference for increasing payments and this effect is strongest when the payments are neither very likely nor very unlikely to cover the cost of effort. In other words, the paper predicts that the preference for increasing payments will be strongest for intermediate payments. The most clear evidence of this is found in Study 2 where we find that the largest difference between preference for increasing sequences of wages and the preference for increasing sequences of nonwage payments occurs for intermediate payments.

Of course, we are eliciting preferences over objects which differ in the timing and amount of money to be received. When observing such choices, it is not a trivial problem to distinguish the effects due to the instantaneous preferences for money and that due to time preferences.[2]

and Abelson (1991), Loewenstein and Prelec (1993), Matsumoto et. al. (2000), Ross and Simonson (1991), Soman (2003) and Varey and Kahneman (1992).

[2]See Issler and Piqueira (2000), Warner and Pleeter (2001), Andersen et. al. (2008) for efforts in this regard.

Eckel and Grossman (2008)[3] offer a simple measure the risk aversion of a subject. In the Eckel-Grossman measure, the subject selects one out of 5 possible gambles whereby riskier gambles offer a higher expected value. The response allows the experimenter to obtain a measure of the Constant Relative Risk Aversion parameter of the subject. We employ a variation of the Eckel-Grossman measure and compare the results to the preference for increasing sequences of money and decreasing hours.

There is a literature which seeks to establish a relationship between the size a monetary payment, the delay in which it is received and the subject's time preference. In particular, Green et. al. (1997) offered subjects a choice between single payment options and found a negative relationship between the discount rate and the amount of the payment.[4] We perform a similar exercise in the sense that we wish to learn how the subject's time preferences (or negative time preference in our case) varies with the size of the payments. However, to our knowledge, there has been no study which examines such an effect on the preference for sequences of payments.

Prior research has examined whether time preferences in one domain (say money) is related to time preferences in another domain (say health). The existing evidence on this matter is mixed. Early literature found that the preference for sequences can be independent of the domain of the sequence (Chapman, 1996a, 1996b). However, more recent papers find a similar time preference across domains (Chapman, 2002; Chapman and Weber, 2006; Hardisty and Weber, 2009). Also to our knowledge, Schoenfelder and Hantula (2003) is the only paper to explore the issue of time preferences over job attributes in different domains. Schoenfelder and Hantula do not find a relationship between the time preference for income and the time preference for the percentage of the job engaged in preferred tasks. Consistent with the literature, we also find mixed results on the matter. In Study 1 we find that the undergraduate economics subjects which exhibit a relationship between the preference for increasing payments

[3] See Holt and Laury (2002) for another such measure and Dave et. al. (2007) for an examination of the merits of both.

[4] Also see Benzion et. al. (1989), Green et. al. (2005), Raineri and Rachlin (1993), Smith and Hantula (2008), Stevenson (1993) and Thaler (1981).

and the size of the payments also exhibit a relationship between the preference for decreasing hours and the number of hours required. In Study 3 we find no such relationship with our law student subjects.

There are two primary criticisms of the literature cited above. The first criticism is that the evidence supporting the existence of the preference for increasing payments tends not to be robust to the method of elicitation. The second criticism is that the responses of the subjects are not incentive compatible and should therefore be interpreted with caution.

Frederick and Loewenstein (2008) show that the preference for increasing sequences is somewhat sensitive to the means of elicitation.[5] We attempt to mitigate these spurious effects. The authors list three reasons[6] regarding which a subject might exhibit a preference for increasing sequences: the utility of anticipating future outcomes, a contrast effect by having a series of improvements according to a reference point, and an extrapolation effect where subjects come to believe that the payment trajectory will continue beyond that specified by the experimenter. We view the first two of these to be valid reasons to prefer improving sequences, however we view the final reason to be an unwanted remanent of the methodology. Therefore, we design the experiment to mitigate the extrapolation effect by explicitly stating that prospects beyond a certain year are identical.[7] For instance, the income questions state that the subject will either be promoted or fired and therefore the answers to the questions will not affect outcomes beyond the period specified.

There is a criticism that the experimental work is largely not incentive compatible. (It is after all relatively difficult and expensive to experimentally manipulate a person's income payment schedule.) Nonetheless, there is evidence that data generated by such experiments is useful. For instance, Johnson and Bickel (2002) find no significant differences between

[5] See Gigliotti and Sopher (2004) for a paper which challenges the robustness of the preference for increasing payments. Also see Manzini et. al. (2006) for "mixed" evidence on the topic.

[6] Also see Read and Powell (2002) for more on the reasons which underpin decisions over time.

[7] We mention the motivations given by Frederick and Loewenstein for preferences for constant or diminishing sequences. Regarding a preference for constant sequences: diminishing marginal utility, equality among "selves" and "divide equally" heuristic. Regarding a preference for decreasing sequences: uncertainty that the future outcomes will occur, opportunity costs and pure time preference.

measurement of time preferences involving hypothetical or actual money. Additionally, a large body of empirical evidence supports the claim that people prefer increasing payments of income. In particular, research has found that wages increase at a faster rate than productivity.[8] This would only seem to be the case when the worker has a preference for such improvements. In another strand, researchers have found that happiness or satisfaction is significantly related to increases in wages.[9] Based on the experimental and empirical work cited above, we are reasonably confident in the applicability of the experiments which follow.

3 Study 1

3.1 Procedure

A total of 105 subjects, recruited from economics classes at Rutgers University-Camden, participated in the experiment. Sessions were conducted in classes of 19, 50, 13, and 23. Subjects were given course credit for attendance and were told that within each session, roughly 1 out of 25 subjects would be randomly drawn to win a prize of $20 in cash.[10] Instructions were provided by the same male experimenter.[11] The subjects were told to consider a hypothetical employment setting. The study posed 5 income sequence questions and 4 hours sequence questions which were recorded on paper.[12]

Before each income sequence question, the subjects were told that they "...are happy with nonmonetary aspects of the job..." and are offered the following options for payment over time. Each income sequence question, offered subjects six options for an income stream over 6 years. The subjects were told to select the one which they most prefer. In each of the five income questions, the subject was presented with a constant sequence of either $\$17,000$, $\$37,000$, $\$57,000$, $\$77,000$, or $\$97,000$. The other response items within each question varied

[8] See Clark (1999), Flabbi and Ichino (2001), Frank and Hutchens (1993), Lazear (1999), Medoff and Abraham (1980) and Smith (2009b).

[9] See Burchardt (2005), Di Tella et. al. (2007), Grund and Sliwka (2007), Inglehart and Rabier (1986) and Senik (2008).

[10] Two payments were made in the large class, whereas only a single payment was made in the others.

[11] The delivery of the instructions was aided by Power Point slides. These slides are available from the author upon request.

[12] The exact items are also available from the corresponding author upon request.

the degree to which the payments are increasing. These increases were designed in a manner that each response within each question summed to an identical amount. Therefore, any subject who positively discounts would prefer the constant sequence of income, irrespective of the amount. Each response had identical values in the third year, however the increasing payments each had lower incomes in first and second years and higher incomes in the fourth, fifth, and sixth years. This increase was linear therefore any income sequence was a mixture between the most increasing sequence and the constant sequence. See the appendix for a sample income question.

The response items were presented to the subjects either in decreasing or increasing fashion. We recoded the responses so that Option 1 represents the constant sequence and Option 6 represents the most increasing sequence. As a result we are able to speak of a stronger preference for increasing payments as being associated with a higher number because the choice exhibited a lower present value.

In order to minimize the extrapolation effect, each response item included the description "same for each" for year 7 and beyond. Also in an effort to minimize the extrapolation effect, the subjects were told that, at the end of the sixth year, they would either be promoted or fired and therefore their choice of income stream would not affect their income after the sixth year. The subjects were told that the dollar amounts were listed in 2009 dollars and that their forecast of inflation should not be factored into their responses.

After the income questions, the subjects were provided with a list of possible hours sequences over the next 6 years. In each of the four hours questions, the subject was presented a constant amount of 40, 50, 60, or 70 hours per week. The other response items in each question were increasing or decreasing step functions, with only a single step, which summed to the same amount over the six years. Therefore, any subject who positively discounts would never prefer a decreasing sequence of hours. As with the income questions, we varied the order of the questions and the response items.

Finally the subjects were asked to provide their description of starting salaries of $\$17,000$,

$37,000, $57,000, $77,000, and $97,000 on a scale of 1 (very low) to 7 (very high).

3.2 Data

To check the validity of the variation of the payments, note that 104 out of the 105 subjects described the starting incomes of $17,000, $37,000, $57,000, $77,000 and $97,000 in a monotonic fashion. See Table 1 for the mean response to the description of a starting salary of the various amounts, with the standard deviation in parenthesis.

$17,000	$37,000	$57,000	$77,000	$97,000
1.624	3.510	4.743	5.724	6.629
(0.890)	(0.883)	(0.867)	(0.826)	(0.624)

Table 1: Mean responses (with standard deviation in parentheses) to description of starting salaries.

See Table 2 for the means and standard deviations of the option choices for each of the income questions.

$17,000	$37,000	$57,000	$77,000	$97,000
3.086	3.571	3.714	3.857	3.867
(2.085)	(2.042)	(2.027)	(2.059)	(1.976)

Table 2: Mean responses (with standard deviation in parentheses) of option choice for each income question.

We run several regressions which support the claim that the preference for increasing payments are increasing in the size of the wages offered. Each regression specifies the degree of the preference for increasing payments as the dependent variable. Regression 1 specifies wage as the independent variable, regression 2 specifies the description of the payment as the independent variable, regression 3 specifies both the description and the wage as independent variables and regression 4 specifies description and description squared as the independent variables. Each regression has $n = 525$. See Table 3 for a summary of the regressions.[13]

[13] In this and the remaining set of regressions, because we are not interested in the intercepts, we do not list them.

	(1)	(2)	(3)	(4)
Wage	0.18^{***}	–	-0.045	–
	(0.063)		(0.14)	
Description	–	0.16^{***}	0.188^{*}	0.54^{***}
		(0.046)	(0.102)	(0.21)
Description squared	–	–	–	-0.046^{*}
				(0.025)
R^2	0.016	0.022	0.023	0.029

Table 3: Regression results of option choice with * indicating significance at 0.1 and *** indicating significance at 0.01.

As can be seen in Table 3, each regression specification suggests a positive relationship between the size of the wages or the perception of the wages.

Study 1 allows the analysis of the within subject relationship between the preference over sequences of monetary outcomes and the preference over sequences of nonmonetary outcomes. We find that there is no relationship between the exhibition of a preference for increasing payments and a preference for decreasing hours. A regression with the sum of the hours choices as the independent variable and sum of the income choices as the dependent variable demonstrates that there is no relationship between the two ($p = 0.94$). Therefore, it seems that subjects exhibit different time preferences for income and required hours.

However, our subjects do exhibit a relationship between changes in the preference for increasing income as income varies and changes in the preference for decreasing hours when the required hours vary. Within the 5 income questions, there are 4 possibilities to have an increase, decrease or no change in adjacent income questions ($\$17K$ to $\$37K$, $\$37K$ to $\$57K$, $\$57K$ to $\$77K$ and $\$77K$ to $\$97K$). Within the 4 hours questions, there are 3 possibilities to have an increase, decrease or no change in adjacent hours questions (40 hours to 50 hours, 50 hours to 60 hours, 60 hours to 70 hours).

We perform a regression where the number of instances in which the there is an increase in the option chosen in adjacent income questions is the independent variable and the number of instances in which there is a decrease in the option chosen in adjacent hours questions is

the dependent variable. In this regression, the estimated coefficient is positive (0.104, *s.e.* 0.0577) and almost significant ($t = 1.80$, $p = 0.074$). We perform another regression in which the number of instances in which there is a constant response in adjacent income questions is the independent variable and the number of instances in which there is a constant response in adjacent hours questions is the dependent variable. In this regression, the estimated coefficient is positive (0.163, *s.e.* 0.0673) and significant ($t = 2.43$, $p = 0.017$). Therefore, we conclude that the study provides evidence that within subjects, there is a relationship between changes in the preference for increasing payments as income varies and the preference for decreasing hours as the amount of hours varies.

3.3 Discussion

Study 1 found a positive relationship between the preference for increasing payments and the size of those payments. Additionally, the study demonstrated a link between preferences for improving sequences involving monetary and nonmonetary outcomes. A drawback of Study 1 is that there was no baseline measure of the preference for sequences of nonwage money with which to compare the preference for sequences of income.

4 Study 2

4.1 Procedure

A total of 212 undergraduate and graduate students in the psychology subject pool at Rutgers University-Camden were recruited to participate in the experiment. The subjects were given course credit for participating but were not paid. The same male experimenter administered the items and answered any possible questions. The responses were recorded on paper.

Subjects were randomly selected to be in one of two treatments: the wage treatment or the lotto treatment. Subjects in the wage treatment were given exactly the same 5 income questions as those in Study 1. In the lotto treatment, the financial amounts were identical to that in the wage treatment, however the description of the source of the money was different.

Lotto treatment subjects were told that a relative won a substantial lotto jackpot and offered the following streams of money. Therefore, the only difference between the two treatments is the description of the source of the payments. The lotto treatment had 108 subjects and the job treatment had 104 subjects.

As in Study 1, we varied the order of the questions and the order of the response items. However, we recoded the responses so that Option 1 represents the constant sequence and Option 6 represents the most increasing sequence. As a result we are able to speak of a stronger preference for increasing payments as being associated with a higher number. Also as in Study 1, we asked subjects to provide their description of starting salaries of \$17K, \$37K, \$57K, \$77K and \$97K on a scale of 1 (very low) to 7 (very high).

4.2 Data

To check the validity of the variation of the payments, note that 209 out of the 212 subjects described the starting incomes of \$17K, \$37K, \$57K, \$77K and \$97K in a monotonic fashion. To demonstrate the relationship between the wage and the preference for increasing payments, we run the following regressions. Each regression specifies the degree of the preference for increasing payments as the dependent variable and the wage as the independent variable. Regression 1 involves the job treatment, regression 2 involves the lotto treatment,and regression 3 pools the lotto and job treatments. See Table 4 for the results of the regressions.

	(1)	(2)	(3)
$Wage$	0.122*	0.119*	0.121***
	(0.065)	(0.066)	(0.047)
R^2	0.0068	0.0060	0.0063
n	520	540	1060

Table 4: Regression results of option choice with * indicating significance at 0.1 and *** indicating significance at 0.01.

As can be seen in Table 4, each regression specification suggests a positive relationship between the size of the wages.

We now compare the Lotto and Job treatments. See Figure 1 which displays the mean choice by the payment size and payment treatment.

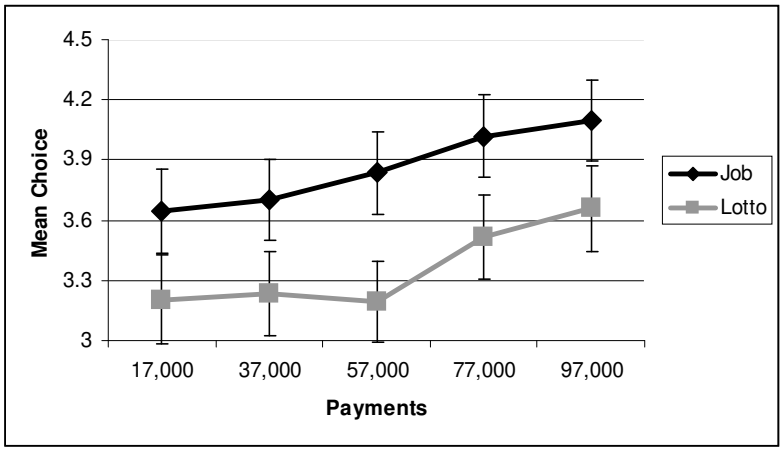

Figure 1: Mean preference for increasing payments by payment size and payment treatment.

Consistent with Loewenstein and Sicherman (1991) the preference for increasing sequences of payments is larger for sequences described as income payments from a job rather than income payments from some other source. The question then becomes, what is the relationship between these differences and the size of the payments. In order to determine this relationship, we perform a t-test between the Lotto and Job treatments for each of the 5 income questions. The t-tests within each of the question types across treatments are as follows with means and standard deviations listed.[14]

	$\$17,000$	$\$37,000$	$\$57,000$	$\$77,000$	$\$97,000$
Lotto	3.20	3.23	3.19	3.52	3.66
	(2.29)	(2.18)	(2.12)	(2.17)	(2.20)
Job	3.64	3.70	3.84	4.02	4.10
	(2.16)	(2.09)	(2.11)	(2.07)	(2.06)
$t-statistic$	-1.44	-1.61	-2.21	-1.72	-1.50
$p-value$	0.075	0.055	0.014	0.043	0.067

Table 5: t-test results across treatments with means (and standard deviations in parentheses).

[14] Each test has 210 degrees of freedom. The p-values listed are for a one-sided test.

Note that Table 5 demonstrates that the Lotto treatment and Job treatment are significantly different for intermediate payments but not significantly different for large or small payments.

4.3 Discussion

The results of Study 2 provide support for the predictions of Smith (2009a). Roughly, Smith argues that increasing payments for wage income can reduce the perceived cost of effort from work. For payments which are very likely or very unlikely to cover the cost of effort, the benefit of such a reduction is minimal. However, for payments which are neither likely nor unlikely to cover the cost of effort, there could be a significant benefit from such a reduction. Therefore, Smith (2009a) predicts that the preference for increasing payments will be largest for intermediate payments. Indeed this is what is found in Study 2.

Other than a mechanism similar to that proposed in Smith (2009a), it is difficult to see how this nonmonotonic relationship could arise. Early explanations of the difference between the preference for increasing sequences of wages and the preference for increasing sequences of nonwage money related to a feeling of mastery which accompanies succeeding at a job.[15] This is likely to be an important reason to value increasing sequences of wages however it is difficult to see how this explanation is consistent with the results of Study 2.

A possible explanation for the relationship between the degree of the preference for increasing payments and the size of the payments is that it is due to decreasing marginal utility. In order to test this possible explanation, we also measure the shape of the utility for money in the following study.

[15] Loewenstein and Sicherman (1991).

5 Study 3

5.1 Proecdure

A total of 230 Rutgers-Camden law students completed our survey.[16] The items were administered online via Surveymonkey.com. An email notification was sent to each law student, which invited them to participate in the survey. The subjects were told that, upon completion of the survey, they would be entered into a lottery for a $50 prize, where one prize would be given for every 50 subjects who complete the survey.[17]

The post law school job market is characterized by two distinct employment types.[18] We characterize these two types as "Big Firm" and "Small Firm/Public Interest." When compared to the latter, the former is characterized by longer hours, higher pay, and little control over caseload. The students are asked for their plans after law school: Definitely Big Firm, Probably Big Firm, Possibly Big Firm, I don't Know, Possibly Small Firm/Public Interest, Probably Small Firm/Public Interest, or Definitely Small Firm/Public Interest. This would allow the subject to be directed to the appropriate income questions and job description.

Like Study 1, each income question offers subjects 6 options regarding identical amounts of income streams which vary in their rate of increase and hence in their present discounted value. As is more standard in the legal profession, we offer the payments over 7 years. We told the subjects that at the end of the 7th year, they will either be fired or promoted hence their choice will have no affect on income after the 7th year.

In an effort to hold perceived cost of effort constant, while we varied income levels, we provided an employment description for both the Big Firm subjects and the Small Firm/Public Interest subjects. Additionally we selected the income levels in order to include values which would be considered to range from very low to very high. The Small Firm subjects were told, "You work 50 hours per week or less. You have control over your caseload. The job is

[16] A total of 279 surveys were submitted however only 239 were completed and were unique. We additionally excluded 9 surveys because they were not completed within one hour.

[17] We made 5 payments of $50.

[18] National Association for Legal Career Professionals (2008).

relatively stress-free and you have a good work-life balance." Then, as in Study 1, we varied the income levels of $28,000, $48,000, $68,000, $88,000, $108,000 and $128,000. The Big Firm subjects were told, "You work an excess of 80 hours per week. You have no control over your caseload. The job is relatively stressful and you do not have a good work-life balance." We varied the income levels of $58,000, $88,000, $118,000, $148,000, $178,000 and $208,000. We randomly[19] determined whether the income questions were asked in an increasing or decreasing order. The response items were automatically randomized by the survey tool. The subjects were then asked to provide the description of the relevant starting salaries on a scale of 1 (very low) to 7 (very high).

Next the subjects were presented with a modified Eckel and Grossman (2008) measure of risk aversion. The item was posed as a choice of bonus structure, whereby the subject could not control the likelihood of obtaining the bonus, and that such a choice would not affect future payments. The choices were: $70,000 for sure, $68,000 with 50% and $74,000 with 50%, $64,000 with 50% and $82,000 with 50%, $60,000 with 50% and $90,000 with 50%, $54,000 with 50% and $102,000 with 50%, $44,000 with 50% and $122,000 with 50%. The Big Firm subjects were presented with the identical options, with the exception that each value was but multiplied by 2. As in the original Eckel and Grossman measure, the response items as listed above are increasing in both risk and expected value. Further, a choice among the options provides a measure of the shape of their utility for money.

Finally, the subjects were offered the hours questions as in Study 1, with the exception that the required hours were specified over 7 rather than 6 years.

5.2 Data

First, as with the two studies above, the preference for increasing payments is related to the size of the payments. We run a regression between the rank of the income question as the

[19] Survey Monkey does not offer a randomization of the question order however this randomization was accomplished by asking for the final digit of the subject's date of birth. Odd numbered dates were directed to a sequence of questions which decreased in the income levels and even numbered dates were directed to increasing questions.

independent variable and the income choice as the dependent variable, such that $n = 1360$. The coefficient on the rank of the income question is positive (0.20, $s.e.$0.031) and significant ($t = 6.29$, $p < 0.001$).

We run 6 regressions in order to better understand the relationship between the preference for increasing payments and the size of the payments. To do so we examine the role of preferences for improving sequences of nonmonetary domains and the shape of the utility curve as measured by the choice of bonus structure. In regressions (1) - (3) the dependent variable is the number of instances of constant responses to adjacent income questions. Regression (1) uses the number of instances of constant responses to adjacent hours questions as the independent variable. Regression (2) uses the response to the bonus question as the independent variable. Regression (3) uses both variables. In regressions (4) - (6) the dependent variable is the number of instances of increasing responses to adjacent income questions. Regression (4) uses the number of instances of decreasing responses to hours questions as the independent variable. Regression (5) uses the response to the bonus question as the independent variable. Regression (6) uses both variables. Each regression has $n = 230$.

	(1)	(2)	(3)	(4)	(5)	(6)
$Hours$	0.041	–	0.045	−0.089	–	−0.075
	(0.11)		(0.11)	(0.18)		(0.18)
$Bonus$	–	0.091	0.092	–	0.091	0.090
		(0.068)	(0.068)		(0.068)	(0.068)
R^2	0.00059	0.0079	0.0086	0.0010	0.0079	0.0086

Table 6: Regression results of option choice. Regressions (1) - (3) have the number of instances of constant responses to adjacent income questions as the dependent variable. We use instances of constant responses to adjacent hours questions as the independent variable in regressions (1) and (3). Regressions (4) - (6) have the number of instances of increasing responses to adjacent income questions as the dependent variable. We use the instances of number of instances of decreasing responses to hours questions as the independent variable in regressions (4) and (6).

Note that in each of the six regressions, none of the variables reach a level of significance. Therefore, we conclude that the shape of the utility curve is not responsible for the relationship between the preference for increasing payments and the size of the payments.

5.3 Discussion

A natural explanation for the relationship between the preference for increasing payments and the size of the payments is that people tend to exhibit decreasing marginal utility of money. However, for this explanation to hold, the relationship must vary with the shape of the subject's utility for money. We measured the shape of the utility of money using a technique adapted from Eckel and Grossman (2008). We do not find evidence that our measure of the shape of utility for money is associated with the relationship between the preference for increasing payments and the size of the payments.

Study 3 also finds that, unlike Study 1, the preference for declining hours required for a job is not related to the preference for increasing wages. This mixed evidence regarding the role the preference for improving sequences across different domains is consistent with evidence. In our study, we speculate that the law students in Study 3 are aware that explicitly offering a declining sequence of required hours is not common. As a result, perhaps they discount the possibility. By contrast, the undergraduate students in Study 1 are perhaps not aware of this fact and therefore we find a relationship across domains.

6 Conclusion

Although prior research has found that people often exhibit a preference for increasing payments, little is known about how these preferences vary with the size of the payments. We contribute to the existing research by finding evidence that the degree of the preference for increasing payments is increasing in the size of the payments. Indeed, we find this in each of our studies, despite the differences in the subject populations.

Although the relationship between the preference for increasing payments and the size of

the payments seems to be robust, our research sheds light on potential explanations: we find evidence against the explanation of decreasing marginal utility. In particular, we measure of the shape of the utility for money and find that it is not related to the finding.

Finally, our paper contributes to the literature by finding experimental evidence supporting the theoretical prediction of Smith (2009a). We find evidence that the preference for increasing sequences of income is strongest for income which is neither likely nor unlikely to cover the cost of effort. As people tend to exhibit a stronger preference for money when the payments are described as wages as opposed to nonwage money, we take a baseline measure of preference for increasing sequences of nonwage money. We find that the difference between the preference for increasing income and the preference for increasing payments of nonwage money is largest for intermediate values.

It is worth reflecting on the limitations of the present study. First, before we completely rule out the marginal utility explanation, it is worth considering our measure of the utility curve. Perhaps behavior in our adaptation of the Eckel and Grossman (2008) measure is unreliable for the large amounts which we employ. Secondly, choice in our experiment is not incentive compatible. It is perhaps worthwhile to look for empirical data which could potentially falsify the experimental studies presented here.

7 References

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8 Appendix

Below is a sample income question from Study 1.

To better understand your preferences for your future career, we will ask a series of questions.

There are no correct answers, so please answer as honestly as possible.

You are reasonable happy with the nonmonetary aspects of the job and you are offered the following payment schedules over the next 6 years.

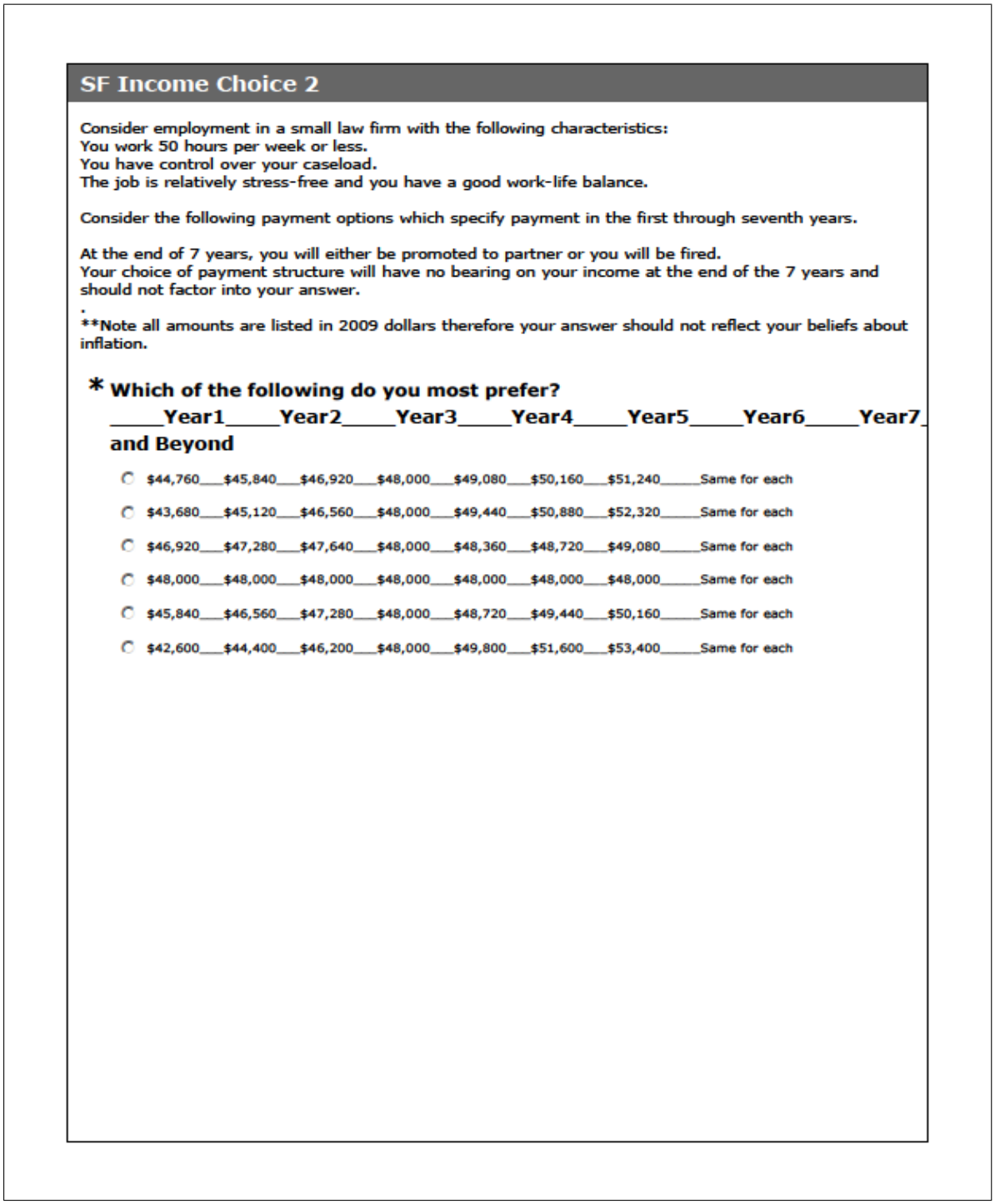
Specifically, you are given 6 options (Option 1,. . . , Option 6) which specifies an amount of income for each of the following 6 years.

At the end of 6 years, you will either be promoted to a higher position or you will be fired. Therefore your choice of payment will have no bearing on your income at the end of the six years.

**Note all amounts are listed in 2009 dollars therefore your answer should not reflect your beliefs about future inflation.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7 and Beyond
Option 1	$37,000	$37,000	$37,000	$37,000	$37,000	$37,000	Same for each
Option 2	$35,890	$36,260	$37,000	$37,370	$37,555	$37,925	Same for each
Option 3	$34,780	$35,520	$37,000	$37,740	$38,110	$38,850	Same for each
Option 4	$33,670	$34,780	$37,000	$38,110	$38,665	$39,775	Same for each
Option 5	$32,560	$34,040	$37,000	$38,480	$39,220	$40,700	Same for each
Option 6	$31,450	$33,300	$37,000	$38,850	$39,775	$41,625	Same for each

Below is a sample income question from the Small Firm/Public Interest series in Study 3.



SF Income Choice 2

Consider employment in a small law firm with the following characteristics:
You work 50 hours per week or less.
You have control over your caseload.
The job is relatively stress-free and you have a good work-life balance.

Consider the following payment options which specify payment in the first through seventh years.

At the end of 7 years, you will either be promoted to partner or you will be fired.
Your choice of payment structure will have no bearing on your income at the end of the 7 years and should not factor into your answer.
.
**Note all amounts are listed in 2009 dollars therefore your answer should not reflect your beliefs about inflation.

*** Which of the following do you most prefer?**
_____Year1_____Year2_____Year3_____Year4_____Year5_____Year6_____Year7_ and Beyond

- $44,760___$45,840___$46,920___$48,000___$49,080___$50,160___$51,240_____Same for each
- $43,680___$45,120___$46,560___$48,000___$49,440___$50,880___$52,320_____Same for each
- $46,920___$47,280___$47,640___$48,000___$48,360___$48,720___$49,080_____Same for each
- $48,000___$48,000___$48,000___$48,000___$48,000___$48,000___$48,000_____Same for each
- $45,840___$46,560___$47,280___$48,000___$48,720___$49,440___$50,160_____Same for each
- $42,600___$44,400___$46,200___$48,000___$49,800___$51,600___$53,400_____Same for each