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Authors

Charness, Gary B
Haruvy, Ernan

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SELF-SERVING BIASES: EVIDENCE FROM A SIMULATED LABOUR RELATIONSHIP

Gary Charness and Ernan Haruvy*

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Abstract: A self-serving bias occurs when people subconsciously alter their perceptions about what is fair or right in a manner that serves their own interests. Perceptions of what is “a fair day’s work for a fair wage” may well vary according to one’s role in the employment relationship. While it is clear that employee satisfaction affects job performance, and that wage affects employee satisfaction, it is not only the wage *per se* that determines morale, but also the perceived fairness of the received wage. Thus, it is useful to have agreement between the views of employers and employees. Some evidence from a laboratory experiment indicates these views differ significantly between participant “employers” and participant “employees.” We compare choices (hypothetical in the case of employers) for the amount of costly “effort” to provide in response to a wage that has been determined outside the employment relationship. In the field, managers must be aware of the relationship between fairness in compensation and employee morale as well as their own biases regarding the fairness reference point. Overcoming such biases requires a careful decision-making protocol in compensation decisions.

Keywords: Experiment; fairness; labour relations; self-serving bias

JEL Classifications: A13, C91, J41, M12

* Charness, Department of Economics and Business, Universitat Pompeu Fabra and Department of Economics, University of California at Berkeley. E-mail: charness@upf.es; Haruvy, Industrial Engineering and Management, Technion- Israel Institute of Technology. E-mail: haruvy@ie.technion.ac.il. Charness gratefully acknowledges support from the Vice-Chancellor for Research Fund at UC–Berkeley and the MacArthur Foundation.

Introduction

Understanding the role of fairness within the organization is central to understanding human behavior in firm settings. In management studies, fairness considerations are grouped together under the umbrella term *organizational justice*. Whereas the definition of organizational justice has evolved considerably with the emergence of new issues (for a thorough review, see Greenberg, 1990), two aspects have gained prominence in the field: *distributive justice* and *procedural justice*.

Whereas distributive justice deals with the fairness of a given outcome, such as salary increase or bonus, procedural justice is concerned with the decision-making process that brought about the outcome. Thibaut and Walker (1975) and Tyler (1988, 1990) offer extensive discussions of procedural justice. Some evidence (e.g., the Kitzmann and Emery, 1993 child-custody field study) suggests that the process can be at least as important as the outcome *per se*, as measured by participant satisfaction. The two may be related as follows: In attempting to arrive at an outcome satisfying distributive justice, without an appropriate decision-making process, an employer will often fall into the trap of self-serving biases, believing the fair wage to be less than it is. The employer will then make less than optimal decisions, resulting in employee unhappiness in its various manifestations.

Some recent trends in the labour market point to increased employee dissatisfaction and hostility, manifested through the rising number of employment lawsuits, employee turnover, employee complaints, and even workplace violence. In a 1998 survey (Flynn, 1998), 84% of surveyed HR professionals reported increased

employee hostility in their organizations; 67% of them blamed this increased hostility on employees' having excessively high expectations. Using labour data, Hamermesh (1998) showed that job satisfaction is quite dependent on expectations and that satisfaction is greatly affected when reality does not meet expectations.

The employment relationship is generally considered to be an incomplete contract (for example, see Milgrom and Roberts, 1992, pg. 329). Both parties to this contract have unspecified obligations and considerable discretion in their actions. Blau (1964) contends that this effectively makes the relationship one of social exchange. Studies such as Akerlof (1982), Kahneman, Knetsch, and Thaler (1986), and Akerlof and Yellen (1990) indicate that perception of fair (or unfair) treatment is an important influence on choices made in this environment. There is a considerable "gift-exchange" literature (Fehr, Kirchsteiger, and Riedl, 1993 is a seminal paper) which examines simulated labour relationships in the laboratory and finds that "employees" seem to generally respond with increasing (costly) effort as the received wage is increased. Given such results and the subjective nature of this issue, management must consider the employee point of view when making evaluations and policy. MacLeod and Malcomson (1998) develop a model that indicates that the existence of an efficiency-wage equilibrium depends critically on a set of self-enforcing social norms.

One's view of fair treatment depends on one's own internal reference point. This reference point is likely to be colored by what is known as *the self-serving bias*. This is the tendency for self-interested parties to evaluate reality in a self-serving manner. As an illustration, Svensson (1981) finds that 93% of American drivers believe that they are above-average drivers. Of greater importance to the setting of this article is that

judgement about fairness is skewed in the direction of self-interest (Messick and Sentis, 1979).¹ If agents indeed value fairness in the outcome, then self-serving biases could play a decisive role in the determination of outcomes. Babcock *et al.* (1995) and Babcock and Lowenstein (1997) demonstrate the importance of the self-serving bias in dispute resolution and union bargaining. More recently, Dahl and Ransom (1999) study how a self-serving bias interacts with one's affiliation to a group (voluntary tithing for members of the Church of Latter-day Saints).

The self-serving bias could result in individuals processing relevant as well as irrelevant information to arrive at the "fair allocation" in self-serving ways. Such self-serving notions of fairness can be manipulated by altering economically irrelevant procedural details. For example, ultimatum game proposals and responses are affected by the process by which the proposer is selected (Hoffman and Spitzer, 1982 and 1985; Hoffman *et al.*, 1994); the arbitrary assignment of roles (plaintiff or defendant) strongly affects fairness perceptions in Babcock *et al.* (1995).

In this article, we present evidence of a self-serving bias in an experimental labour market. Charness (1996) modifies an experimental design from Fehr, Kirchler, Weichbold, and Gächter (1998), in which each subject is assigned the role of either an employer or an employee and each employee is assigned a wage and responded with an effort choice between 0.1 and 1.0, inclusive. The employee's payoff is decreasing in effort and therefore his own payoff-maximizing effort is the minimum possible effort, while the matched employer's payoff increases multiplicatively with higher effort. That study focuses on employee effort choices induced by wages determined by either a self-

¹ Explanations include the tendency overestimate one's own contribution to joint tasks (Ross and Sicoly,

interested employer or a source external to the employment relationship, finding particular difference in the responses made to low wages.

We examine results from the setting in which the employer does not choose the wage, but an employee is nevertheless asked to choose costly effort to determine the monetary payoffs for the employer and employee. The employer has no implementable choice with respect to the outcome, but is told the actual assigned wage and asked to state what effort he would provide were he in the employee role.

Method

This experiment was conducted in the spring of 1996 at the University of California at Berkeley. A full description of the instructions and record sheets issued to the subjects is available at <http://iew3.technion.ac.il:8080/~haruvy/selfserv>. Participants were recruited from economics classes, by notices posted on campus, and by an e-mail message sent to business undergraduates. Subjects were randomly divided (by odd and even numbers) into “employers” and employees” and separated into two rooms. In the treatment discussed here, there were 39 employers and 39 employees. As in Fehr *et al.* (1998), each employee was paired anonymously with one employer in each period (10 periods in all) and it was common knowledge that workers and firms were not re-matched with the same person. In general, there were ten employers and ten employees in a session.

Employees were given a wage, which was assigned by either an individual draw from a bingo cage or a third party (the experimenter) in the range from 20 to 90,

1979) and also to attribute successes to ability but failures to bad luck (Zuckerman, 1979).

inclusive. Once assigned a wage, each employee was asked to record an effort choice (between 0.1 and 1.0, inclusive) on a record sheet and to fold this sheet before turning it in to the experimenter. This sheet was then given to her employer in the other room. The combination of wage and effort determined outcomes and monetary payoffs for each pair of subjects in a period. Each employer was given an endowment of 120 “income coupons” in each period. The employer’s payoff function was given by:

$$\Pi_F = (120 - w) e \quad (1)$$

and the payoff function for an employee was defined as:

$$\Pi_E = w - c(e) - 20 \quad (2)$$

where F represents the employer (firm), E the employee, e denotes the employee’s effort, w is the wage, and $c(e)$ is the cost of effort, a function increasing in e . The effort cost function facing an employee is as follows:

Effort	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Cost	0	1	2	4	6	8	10	12	15	18

For the random case, the data from a treatment where wages were employer-determined was used to create a mapping of wages onto the numbers of balls in a bingo cage. For each subject in each period, a ball was drawn from the bingo cage and the employee was told the wage. In the third-party condition, these draws were reproduced (subject to production flaws). The experimenter (truthfully) informed the participants that the wage had been pre-selected by a third party (the experimenter) individually for

each employee in each period. Having all participants meet in one room at the outset helped to ensure that another real person's payoffs were credibly dependent on the employee's action choice.

Each employer was individually told the wage received by the paired employee and, before being told the employee's choice of effort, was asked to state what effort he or she would have provided at the indicated wage. Next, the employee's effort choice was revealed and the employer was asked to express an opinion about this choice on a Likert scale from 1 - 7.

Evidence

Subjects in the employer role generally state they would provide, for any given wage, more effort than subjects in the employee role actually provide. Let e^h denote the hypothetical effort stated by the employer and e^a denote the actual effort exercised by the employee. The table below gives a summary of the data:

Mean e^h	.381
Mean e^a	.329
# of observations where $e^h < e^a$	102
# of observations where $e^h = e^a$	90
# of observations where $e^h > e^a$	188

On average, e^h exceeded minimum effort by 23% more than did e^a , so that actual employer profits (and employee productivity) were substantially lower than they would have been with employer-indicated effort choices. It seems probable that this effect would be even greater with employer-generated wages.

We can test for the significance of the observed differences. A basic test that is easy to implement is the binomial test (Siegel, 1956):

$$Z = [(x - NP) \pm 1/2] / [\sqrt{NP(1-P)}],$$

where x is the number of observations in the category in question, N is the total number of observations, and P is the probability (under the null hypothesis) of getting an observation in this category. This test gives significance at a p-value of .00001, so that the difference between efforts for the different roles is significant at any reasonable significance level. Alternatively, we could perform the more rigorous one-sided T-test of the null hypothesis that $e^h = e^a$ against the alternative that $e^h > e^a$. We calculate the t-statistic to be 3.506, with a p-value of less than 0.0005. Hence, we reject that $e^h = e^a$ against the alternative that $e^h > e^a$.

We further test whether the employer's level of expressed satisfaction with the employee effort level is affected by the difference between the hypothetical monetary gain to the employer and the actual monetary gain to the employer. Otherwise, the stated hypothetical effort should not affect the employer's expectation from the employee. An

ordered Probit regression of employer's stated satisfaction against monetary payoffs yields a log-likelihood of -532.837. Including the difference between hypothetical and actual payoff in the regression increases the log-likelihood to -461.907. Given the nested nature of the pure monetary model ($\alpha = 0$) within the model with both monetary payoffs and the difference term (α a free variable), we can easily reject the view that the employer's stated hypothetical effort is not a genuine reflection of employer expectation. See Tables 1 and 2 for parameter estimates for the ordered Probit regressions.

Discussion

We have shown a real one-sided bias between hypothesized efforts and actual efforts, but have yet to demonstrate the self-serving nature of this bias. One way to see the self-serving nature of the bias is to look at the difference in implied shares. While both employers and employees declare, on average, an effort level in which the employee's share is greater, the employer's stated effort implies a more equal division. That difference is significant (see Figure 1). The self-serving nature of the bias is also observable in the asymmetry in employer satisfaction with respect to whether $e^h > e^a$ or vice versa.² We find a rather consistent bias - a positive difference in effort levels must be 50% greater than the corresponding negative difference to induce the same change in employer satisfaction (see Figure 2).

The amount of costly effort that an employer stated that he would provide exceeded the amount chosen by nearly a quarter. We cannot assess the extent to which

² While it is true that microeconomic theory suggests looking at implied differences in monetary payoffs rather than differences in effort, people may experience satisfaction directly from effort choices, rather than first calculating the effect on their payoffs. Thus, this approach may offer some insight.

this difference stems from either the difference in roles or a potential difference between hypothetical responses and implemented responses. However, in the field any effort level a manager or employer observes in his employee would similarly be compared to his own hypothetical level, so our results are still relevant to this context.

The bias has important consequences for labour relations and productivity. Perceptions of fairness are critical in an employment context, since the labour contract is notably imprecise and behavior is substantially discretionary. This bias could lead employers and managers to make poor predictions of employee perceptions of fairness and their consequent responses. An inappropriate wage would have direct adverse effects on productivity, manifested in shirking, strikes, and even sabotage.

Workers may not work as hard for a given wage as managers feel that they themselves would in the workers' shoes. We feel that it is useful for managers and employers to be cognizant of the potential self-serving bias in this regard. Aligning perceptions and expectations of fairness seems crucial in interactive environments such as the workplace, as there may be substantial consequences for labour relations and productivity.

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Figure 1 The employee's share under the employee's actual effort function (of wage) and under the employer's hypothetical effort function (of wage) over the wage range.

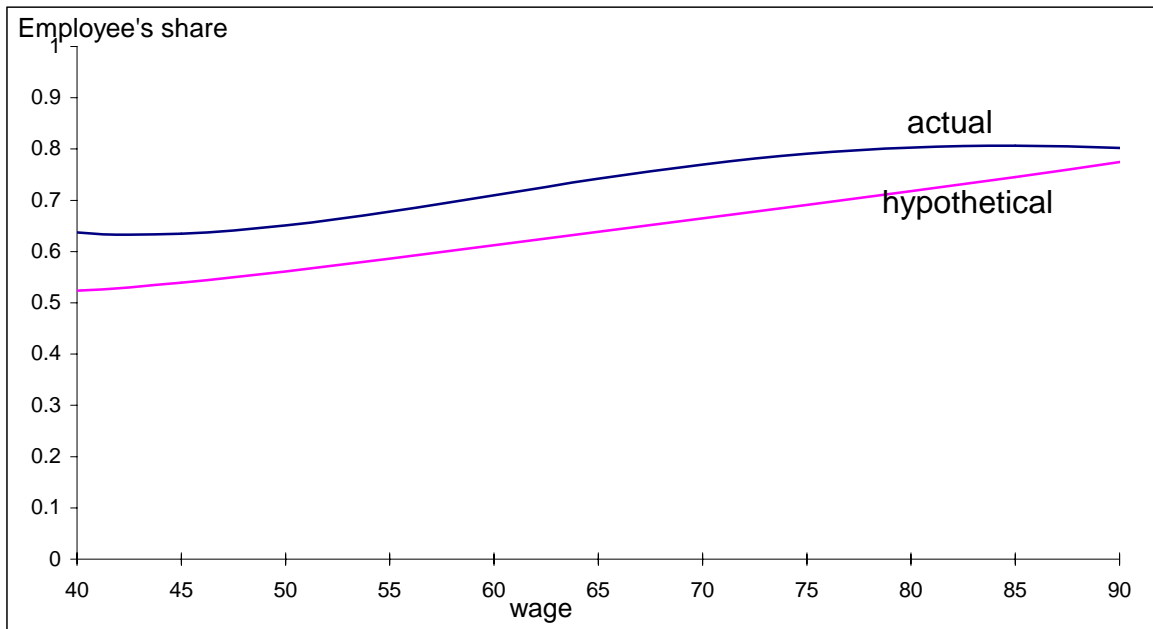
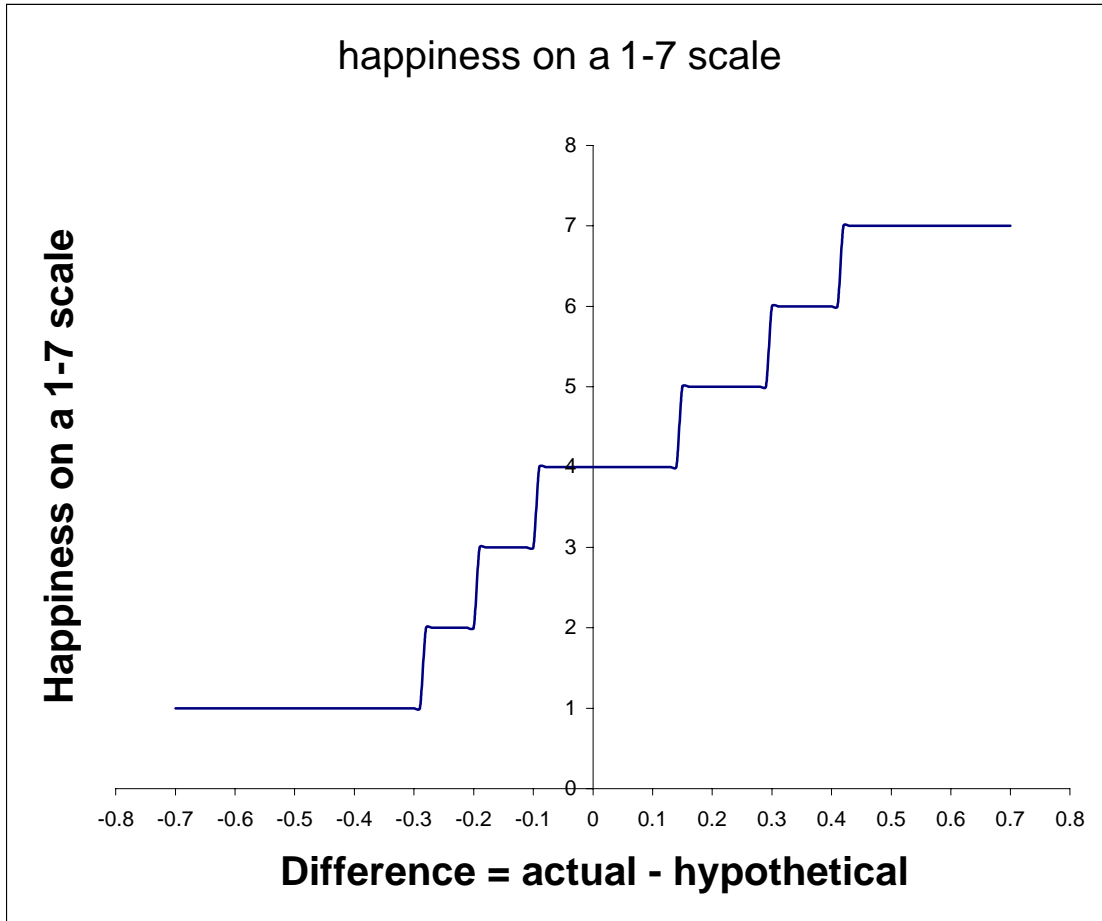


Figure 2 Ordered Probit Results

Key:

Diff_i = Denotes, for employer-employee pair i , the difference between the employer-stated hypothetical employee effort and the actual observed effort by the employee.

M_i = Denotes, for employer-employee pair i , the employer's monetary payoff.

$D_i = M_i + \alpha \text{Diff}_i$

Score = A subjective measure of happiness by employer on a Likert scale (increasing in happiness) from 1 -7

$D < A_0$	Score = 1
$A_0 < D < A_1$	Score = 2
$A_1 < D < A_2$	Score = 3
$A_2 < D < A_3$	Score = 4
$A_3 < D < A_4$	Score = 5
$A_4 < D < A_5$	Score = 6
$A_5 < D$	Score = 7

Table 1: Satisfaction on monetary payoff

Parameter	Estimate	Std. Dev.	t-statistic
A_0	6.821	0.970	7.033
A_1	11.627	0.881	13.197
A_2	16.248	0.750	21.658
A_3	27.252	0.798	34.157
A_4	33.891	1.066	31.781
A_5	39.349	1.253	31.403
σ	9.7061	0.383	25.312

Log Likelihood = -532.837

Table 2: Satisfaction on monetary payoffs and difference between hypothetical and actual effort

Parameter	Estimate	Std. Dev.	t-statistic
α	63.947	10.586	6.041
A_0	-8.716	2.942	-2.963
A_1	1.091	2.383	0.458
A_2	10.736	1.731	6.201
A_3	33.430	2.042	16.372
A_4	47.615	3.345	14.234
A_5	58.917	4.504	13.080
σ	16.071	1.444	11.133

Log Likelihood = -461.907

EMPLOYER QUESTIONNAIRE

For each period, indicate the wage offer that has been selected and the quantity of work that you would have chosen if you had been selected as the employee; when you learn the amount actually chosen by the employee, please enter this as well.

	<u>Wage Selected</u>	<u>Your quantity of work</u>	<u>Amount chosen</u>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

Please indicate, for each round, your opinion of the quantity of work chosen by your employee.

	Disappointingly Low			Reasonable		Surprisingly high	
1.	1	2	3	4	5	6	7
2.	1	2	3	4	5	6	7
3.	1	2	3	4	5	6	7
4.	1	2	3	4	5	6	7
5.	1	2	3	4	5	6	7
6.	1	2	3	4	5	6	7
7.	1	2	3	4	5	6	7
8.	1	2	3	4	5	6	7
9.	1	2	3	4	5	6	7
10.	1	2	3	4	5	6	7