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Esteem and Risk Aversion

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Abstract

We consider how the demand for esteem shapes risk-taking behavior. When individuals care about what other people think of them, and gambles are bundled with esteem, they may be especially risk-averse with respect to losses and risk-loving with respect to gains. We consider the implications of this postulate for labor markets, wage stickiness, high powered incentives, search, and related issues. We consider whether the esteem hypothesis offers predictions that go beyond those of standard behavioral economics.

1. Introduction

Behavioral economics has modified standard neoclassical postulates about individual choice. Economists now make alternative assumptions about utility maximization, including overestimation of small probabilities, habit formation, time inconsistent preferences, and confirmation bias, among other phenomena.

We explore one modification of the standard model, by incorporating individual self-image into the utility function. We postulate that individuals value a favorable self-image and want to avoid an unfavorable self-image. In particular, a person may desire to feel that he is highly productive, highly successful, highly skilled, and "wanted" by others, including by his or her employers, friends, and potential lovers. People wish to feel good about themselves, and they look to others for approval.

We then explore the consequences of this perspective for risk aversion. It turns out that the pursuit of esteem can lead to behavior under uncertainty which otherwise looks puzzling. It makes people "loss averse," highly risk-averse for gambles that appear "small" relative to material wealth, and potentially risk loving for gains. It also offers some predictions about when we are likely to find such behavior, predictions that distinguish the esteem account from other behavioral theories.

Our investigation has many precursors in the social science literatures. Kuran (1995), McAdams (1997), Cowen (2000) and Brennan and Pettit (2000) all study aspects of the economics of esteem, but they do not consider esteem and risk-aversion. Frank (1985) examines how status-seeking influences labor markets, but again does not focus on risk.[1]

Psychologists argue that people undertake many activities for reasons related to self-esteem, rather than for material rewards (see, for example, DeCharms (1968), Deci (1971) and Furnham (1990)). Berglas (1990) discusses "self-handicapping:" the tendency for a person to choose actions that prevent him from looking like he has low ability, even if these actions hurt performance. Dweck (2002) described students at a Hong Kong university who viewed intelligence as a person's fixed characteristic. These students avoided taking a useful class in English because they feared that poor performance would reflect poorly on themselves. In the following we show how similar motives lead people to devote little effort to such activities as search for a higher wage.

In the history of ideas more generally, the notion of esteem-seeking was common in eighteenth century thought, including David Hume and Adam Smith. Smith (1981 [1759], p. 57) wrote that the search for approval was "the end of half the labours of human life." We also find the idea of esteem linked to the idea of self-deception, or the unwillingness to sample more information. La Rochefoucauld

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[1]We also model esteem more generally than does Frank. Our model holds whether workers value esteem in its own right, or whether they value esteem only relative to the esteem received by others; Frank considers only relative esteem.

Other works (notably Scharfstein and Stein (1990)) consider reputation in labor markets more generally, although they do not add reputation to the utility function. Cowen and Sutter (1997) and Glazer and Hassin (2001) consider esteem-seeking, or fame-seeking, in the context of politics.

(2001 [1768]) argued that individuals are willing to self-deceive about the available information to think better about themselves.[2]

A large literature offers explanations for behavior that violates the basic von Neumann-Morgenstern theory of expected utility; the seminal explanation is (1982) (see Machina (1989) for a survey of other approaches). Keeney and Raiffa (1976), among others, consider how a multi-attribute utility function may modify the results of expected utility theory. Yet these works do not focus on the nature of esteem or in what ways risk preferences across esteem can differ from those across money.

The paper proceeds as follows. Section 2 considers how risk-aversion across esteem can differ from risk-aversion across money. Section 3 considers some testable implications of the theory and offers three simple models. The paper closes with some concluding remarks.

2. Modeling ego utility: Esteem and risk-aversion

We follow standard assumptions about utility, letting utility as a function of esteem be concave, or exhibit risk aversion: a loss of esteem pains an individual more than a gain in esteem satisfies him.

A person's esteem changes whenever the outside world gives him information about his personal value or his market prospects. So esteem is affected when we are hired for a job, when we receive a bonus, when we find our marriage proposal spurned, when we are insulted, and so on.

The rationale behind the assumption of risk-aversion is easy to see. Most people's feelings are easily hurt. Assume, for instance, that the personality, skills, or morality of a person were put up for free and open debate. One group of debaters would argue that the person was good; another group would argue that the person was bad. Almost everyone would, on net, find his or her feelings badly hurt by such a debate. It would be small consolation to hear that the number of favorable opinions equaled the number of insulting ones. Our feelings would be hurt even if the number of favorable opinions exceeded the number of unfavorable opinions. A negative opinion hurts considerably more than a good opinion helps.[3]

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[2] Cowen (2002) surveys thought on self-deception more generally. See also Benabou and Tirole (2002).

[3] Under one hypothesis, the asymmetry between positive and negative esteem springs from the nature of self-deception. Think of self-deception as excessively weighting some information (favorable to self-esteem) and discarding other information unfavorable to self-esteem (Mele 2001). If a person is neutral towards us and sends no message, we tend to assume, for the sake of our pride, that the person likes us. So "no message" gets translated, through self-deception, into a result of "an implicitly positive message." A person who simply receives fewer positive messages does not suffer a large loss in his self-esteem. He simply fills in the blanks with positive expectations. But if the same person says he does not like us, it is harder to self-deceive and think the person really likes us. The decline in self-esteem can be large. So the difference between positive and negative messages springs from a baseline that, for reasons of self-deception, is closer to the positive message than objective reality would support.

Risk preferences for esteem differ from risk preferences for money in yet another regard. If an individual is risk-loving in terms of money, the outside world will try to present him with gambles having negative expected value. The individual will lose money, and these gambles will continue until the individual is no longer in the risk-loving range on the upside. For this reason economists are reluctant to postulate risk-loving behavior at the relevant margin. But the same kind of arbitrage does not occur in terms of pure esteem. Unless esteem can somehow be bundled with money, no outside party profit from urging a gambler to take risk-loving gambles in terms of esteem. Esteem, unlike money, is not transferred in zero-sum fashion when one party loses a gamble. Risk-loving behavior for esteem, on the upside, may therefore persist indefinitely without encountering the danger of the "Dutch book."

Suppose that people care about the sum of utility from consumption and utility from esteem. Consider an action that leads to an uncertain income. The effect can be to increase income by much, but change esteem by little, or it can be to change income by little, but change esteem by much. Moreover, the utility functions for income and for esteem may differ, one showing greater diminishing marginal utility than the other.

This may mean that a random outcome which looks risky when evaluated by its consequences for income may impose little risk when evaluated by its consequences for esteem, or that outcomes which differ little in their consequences for income may have large consequences on esteem.

An individual, for instance, may lose only a dollar betting on a football game, but the esteem loss can be large. The individual cannot escape realizing that he miscalculated, whether the bet was for a large or small sum.

In most of the paper we shall consider examples in which the income change is small but the esteem change is large. But the opposite can also happen, especially when the money payoff is purely a function of luck, rather than of skill. In that case losing the gamble little affects esteem.

Because the effects of an outcome on esteem can far exceed its effects on income, an individual may be much more risk-averse than would be suggested by the standard theory of concave utility functions for money. A lost gamble, by construction of the example, hurts self-esteem rather than merely reducing income.

3. Predictions of the theory: Bundling esteem and money

To derive testable predictions, we must ask when gambles are plausibly bundled with esteem, and when they are less likely to be so bundled. Consider some examples.

3.1. Games of skill versus games of luck

Our theory predicts that individuals differ in their risk preferences for games of skill and games of luck. We expect games of skill to be more tightly bundled with esteem than are games of luck. Winning a game of skill increases esteem, while winning a game of luck does not. So when a game of skill is going on, the individual is gambling across money and esteem prizes at the same time.

When esteem enters the picture, individuals are more likely to be strongly risk-averse. A gamble becomes a more dangerous event. For this reason, we expect bets on games of luck to be more common than bets on games of skill, as we observe. Most betting in the United States is on sports, horses, and games of pure luck, such as slot machines. People who do bet on games of skill often have private information about skill levels, such as we find with pool hustlers.

The literature on empirical psychology provides some support for these assertions. Feather (1967) finds that self-reports are consistent with this hypothesis. Individuals experience greater internal attraction to skill-related tasks than to luck-related tasks, yet they also experience greater repulsion at the thought of failure. A significant literature suggests that losing at games of skill, unlike losing at game of luck, weakens morale and causes depression (see Weiner and Litman-Adizes (1980), p.63).

We also expect that people will be more willing to insure against catastrophes that would be "their own fault" rather than against purely exogenous losses. For instance, a person may fear that a burglar will break into the house. To some extent, this would be a fault of the individual homeowner. That homeowner had the chance to buy good locks, an alarm system, a watchdog, and so on. If a burglar succeeds the homeowner feels bad having inadequately prepared. We therefore predict that, given risk-aversion for esteem, theft insurance will be common, .

Compare theft to the possibility of an earthquake. If a house suffers from earthquake damage, few homeowners blame themselves (unless perhaps they built on a hill in Malibu). The earthquake is regarded as exogenous bad luck, and the resulting damage involves no loss of esteem. We therefore predict that many people will fail to buy earthquake insurance, or at least they will buy it at lower rates than they buy theft insurance. Financial risk-aversion will certainly kick in, but will be only weakly supplemented by risk-aversion in esteem.

Friedman and Savage (1948) raise the puzzle of why the same person may buy insurance and play the lottery or take other chances with upward risks. Behavior of this kind follows naturally from an esteem-based utility function. An individual has two reasons to avoid a large, uninsured, loss: conventional monetary risk-aversion, and the fear of losing esteem. That same person would lose little esteem by losing a game of chance, such as the lottery, and risk-aversion will be correspondingly weaker in for a game of chance.

Atkinson (1964) offers the well-known psychological theory that esteem returns are greatest for very difficult achievements, and that failure is most humiliating for apparently easy tasks (see also Lanzetta and Hannah (1969)). This suggests that people will overweight small probabilities, of either success or failure, when esteem is involved. Similarly, high-return gambles, when esteem is attached, may be less attractive than they at first appear. In both cases looking at dollar awards alone will misstate the relevant problem.

Harbaugh (2002) insightfully uses the observation that when success is unlikely, and even skilled people are likely to fail, failure little damages a person's reputation. A manager who is risk averse with respect to his reputation may therefore favor projects with a low probability of success. Decision-makers will appear to

overweight such probabilities, when in fact they seek reputation and esteem.

3.2. Merit pay and bonuses

Taking a job with merit pay and bonuses is a gamble linked tightly to esteem. A worker who receives high merit pay will conclude that he is highly valued by his employer and he will gain self esteem. If instead his salary is cut, his esteem will fall. The interpretation of a zero bonus may depend on the context and the expectations created by the employer.

This linkage to esteem can make workers highly risk-averse when it comes to merit pay. Market data support this prediction. Medoff and Abraham (1981), Jensen and Murphy (1990), and Baker, Gibbs, and Holmstrom (1994) all find that merit pay is scarce or underutilized. The reason is not that firms find merit pay harmful: Lazear (2000), Shearer (2000), Femie and Metcalf (1999), Asch (1990), and Cacciola (2000), among others, find that merit pay boosts productivity. Risk-aversion in esteem may explain this discrepancy. High-powered incentives will make it harder for the firm to attract employees, even if those same incentives raise output. Furthermore, those same incentives may boost physical output, but they are less desirable once we consider how they can hurt esteem.

We also observe that firms cite "low morale" as a primary reason for refusing to cut wages when demand is low (Blinder (1998), Bewley (1999)). We interpret "low esteem" as one factor entering into low morale more generally. Employers believe that wage cuts, by lowering morale, may cause workers to desert the firm en masse or to sabotage production. It is possible that once the workplace becomes a source of low esteem, workers wish to minimize this disutility. They either leave, seeking a positive message elsewhere, or they vilify the employer, lowering the import of the message by attacking its source. This kind of reaction can lower morale and lower productivity. Employers might be better off firing workers, rather than keeping offended workers at a lower wage.

Considerations of esteem can also affect the wage a potential worker seeks or demands. As before, suppose a worker is unsure how much he is worth to an employer. If he demands a high wage, the firm is likely to reject the offer. But since the wage demand which was rejected was high, the information contained in the rejection is only that the worker's productivity is less than that high level. If the worker demands a low wage, the firm is likely to meet his demand. But the risk here is that the firm will reject the demand, showing that the worker's productivity is low indeed, and so lowering his esteem. The effect of esteem on wage demands is therefore not obvious.

To obtain explicit solutions, let the prior probability about the worker's marginal product be uniform on (0, 1).

Consider first the worker's offer if he aims to maximize expected utility from income, where the utility from income is $\sqrt{x}$. An offer of working for wage x is accepted if the worker's marginal product exceeds x. The worker thus chooses x to maximize $(1-x)\sqrt{x}$. Solving the first-order condition gives the solution $x = 1/3$.

Consider next maximization of expected utility from esteem. We can make two alternative assumptions. The first is that a worker's utility from esteem depends on the expected level of his productivity. If the worker demands x and the firm finds his productivity to exceed x, then the expected productivity is *(1+x)/2*. If the firm finds his productivity to be less than x, then his expected productivity is *x/2*. For straightforward comparison with the case where the worker cared about expected utility from income, let the worker's utility from self-esteem x be $\sqrt{x}$. Then the worker maximizes *(1-x)* $\sqrt{((1+x)/2)} + x \sqrt{(x/2)}$. This function has a maximum at 0 and at 1 (where utility is $\sqrt{(1/2)}$), and a minimum at 1/3. So clearly concern about esteem, with diminishing marginal utility of esteem, differs from concern about income. If the job applicant is indifferent between demanding a wage of 0 or a wage of 1, then we might expect that his average demand is *1/2*, which exceeds the demand, *1/3*, under risk aversion for income. Moreover, though utility from esteem at *x=0* is the same as utility at *x=1*, the absolute value of the derivative is greater at *x=0* then at *x=1*. So if the worker fears that his salary demand will be misinterpreted (the firm thinking that when he demands *0* he demands a bit more, or that when he demands *1* he demands a bit less), he would prefer to demand *x=1*. The concern about esteem can make a job applicant demand a high wage. Note also that expected utility when *x=0* and when *x=1*, namely $\sqrt{(1/2)}$, is the same as utility when he gets no estimate of his productivity, but looks at the mean of his prior beliefs.

An alternative assumption is that the worker's utility from esteem is a function of the firm's point estimate of the worker's productivity. If the worker demands x and his productivity exceeds x, then the firm believes his productivity lies within the interval *(y,y+dy)* with probability
1/(1-x)dy for all y exceeding x. If the worker demands x and his productivity is less than x, then the firm believes his productivity lies within the interval *(y,y+dy)* with probability *(1/x)dy* for all y less than x. The applicant's expected utility is then
$x(1/x)\int_0^x \sqrt{y}dy + (1-x)/(1-x)\int_x^1 \sqrt{y}dy$, which is a constant. Whether the average wage demand will be higher or lower than when the applicant cares about income rather than esteem is therefore ambiguous. A plausible assumption in the presence of indifference, however, is that a worker is equally likely to demand any value between 0 and 1, and therefore once again, the concern about esteem can make a job applicant demand a high wage.

3.3 Sorting

Sorting mechanisms will strengthen these effects. In the standard principal-agent model, the principal offers the worker a reward for high output. A simple model has output either *High* or *Low*, has the principal prefer *High* output, and offers the worker the minimum reward for *High* output that will induce him to exert *High* effort. Now the more costly is effort to the worker, or the less effective is his effort in producing output, then the greater must be the reward for *High* output to induce that output.

Under our assumptions, a worker offered a large marginal reward would deduce that the employer thinks the worker has low ability. In other words, the employer is signaling a belief that effort is costly to the worker, or that the worker's effort is unproductive. A worker who is offered a high reward may therefore feel insulted, for he realizes that the employer thinks poorly of him. A firm may therefore find it difficult to hire workers when it offers a low base salary with high-powered incentives.

Consider the choice that would be made by a worker who cares about self-esteem. Suppose the employer knows the worker's ability, but that the worker does not. A firm that offers a fixed wage enjoys all the gain if the worker has high ability, and bears all the loss if the worker has low ability. With merit pay, the firm gains less if it happens to hire a high-ability worker, and loses less if it happens to hire a low-ability worker. Thus, the firm will be more careful to hire high-ability workers if it pays a fixed wage. A job seeker thus views an employer who offers a fixed wage as thinking more highly of him than of an employer who offers a piece rate. The person may therefore be more willing to take the job with a fixed wage, even though he expects to earn more on a job with a piece rate.

We must also consider the situation facing a worker after he is hired. If merit pay involves better measurement of a worker's output, then a worker will find out more about his ability under merit pay than under a fixed wage. If the worker is risk averse in esteem, then once again he should prefer the job with a fixed wage.

3.4. Search

Risk-aversion in esteem may limit job search, thus making labor markets less efficient. Consider a worker who earns w at his current job. He could search for a new job, but is unsure what he will find. For simplicity, suppose that the wage he may find can be *Low* (w_L), or High (w_H), with $w_L < w_H$. The worker currently earns w_L. He may be paid w_L either because that is his marginal product, or else because though the person's marginal product is w_H, the person had not previously searched and so is currently underpaid. His current utility is therefore $U(w_L, \pi_L w_L + \pi_H w_H)$. If he engages in search, his expected utility will be $\pi_L U(w_L, w_L) + \pi_H U(w_H, w_H)$.

Even if search is costless, the person may avoid searching. Note that the behavior of a person who cares only about income, but who is risk averse, differs. He can reject any job that pays him a lower wage than his current one, and enjoy the income from a higher-paying job, even if the pay is less than what he had expected. Self-esteem differs because a person offered a low wage suffers a loss of self-esteem even if he rejects those offers to keep his current job–the information generated by search affects his utility even if his income is unaffected.

A person concerned about self-esteem will avoid searching for a new job if $U(w_L, \pi_L w_L + \pi_H w_H)$ is sufficiently greater than $U(w_L, w_L)$, while $U(w_H, w_H)$ little exceeds $U(w_L, \pi_L wL + \pi_H w_H)$. Different employers may have different reputations for ability in screening workers. Suppose that employer *A* will offer wage w_H only if he knows for sure that the worker's productivity is high. But employer *B* is less careful, offering wage w_H even to workers with low productivity. Then rejection by *A* damages self-

esteem more than does rejection by *B*, and so a person may be more willing to apply for a job at the highly selective employer.

Similarly, a worker who is negotiating for a wage may constrain his demand, for fear that his request will be rejected, and therefore learn that he is worth less than he thought. That is, the worker may be unwilling to ask for w_H, because he may find out he is rejected, and therefore his expected self-esteem could decline.

If workers are reluctant to search for a new job even when they could expect to find a job with a higher wage, then the wage a person earns on his first job will affect his later wages. Beaudry and DiNardo (1991) find such strong persistence in initial wages, characteristic of a labor market with imperfect search. Using the Panel Study of Income Dynamics and controlling for education, experience, tenure, industry, region, race, sex, union status and marriage, they find that good labor market conditions when a person entered the labor force increase his wages even after controlling for current conditions; conversely, controlling for the best labor market conditions since the start of the job, contemporaneous conditions are no longer significant.

3.5. Winner-take-all contests

The examples we gave so far showed people avoiding risk. But in some situations a person whose utility from esteem shows risk aversion may nevertheless prefer to participate in a market where the outcomes, as evaluated by money, are highly risky.

We shall give an example of the market for superstars. In such a labor market, one person earns a large prize, and all others engaged in vying for the prize win nothing. The race to become a CEO or to win a starring role in a movie may have these characteristics (see Rosen (1981)). The current literature explains why the winner will earn a far higher income than the losers, but leaves unexplained why workers would be willing to participate in such a risky market.

For our purposes, observe that in the market for superstars, a loser only knows that he is not the very best, but may recognize that he may be only a bit worse than the winner. The loser may therefore have a far smaller income than the winner, but may suffer little loss of self-esteem. Indeed, since the loser does not know his quality, he faces no risk of having a large loss of self-esteem, were he revealed to be the lowest quality applicant or to have a very low quality of output. A worker who cares about self-esteem may prefer a winner-takes-all contest to a compensation system in which each person is paid his marginal product.

In the markets discussed above, the wage was set by market demand for the best performer, and the best person was made the winner. Related (but not identical) situations arise when an organization chooses winners and awards esteem, but is not constrained to choose the best applicant as the winner.

Consider applications to prize committees, such as the Nobel or Booker prizes, or the Fields Medal in mathematics. If the prize is designed to encourage competition for excellence, the prize designer must consider how its prize policy affects the esteem and thus the efforts of applicants or their willingness to enter the contest.

In particular, a high chance of failure deter little, if many other highly qualified applicants fail to win the prize. Indeed, a prize committee that rejects some highly qualified applicants may find that it can encourage more excellence. But to do so, its prize selections must show some imperfection or noise in selecting the best competitors.

Consider an example. Let ten scientists be potential competitors, with ranks 1 through 10, where 1 is the best rank. Suppose that an applicant does not initially know his own ranking. Call $U(x)$ the esteem utility an applicant gets when the expected posterior value of his ranking is x; because of the way we define rankings, $U' < 0$. Let the prize committee be able to select only one person. If it selects the best scientist, then a competitor's expected utility is $(1/10)U(1) + (9/10)U(6)$. Suppose instead the committee chooses at random between the two top competitors. Then a scientist's expected esteem-utility is $(1/10)U(1\ 1/2) + (9/10)U(5\ 8/9)$. So if there is diminishing marginal utility of having a high rank, an applicant will enjoy higher expected utility when the committee accepts randomly from the top two candidates then when it accepts only the best candidate. In other words, a committee that wants to attract competitors may have to sometimes reject the best competitor to achieve that end. The committee may induce more effort if many different people, not just the best, believe they have a chance of winning.

We are not suggesting that committees consciously choose inferior candidates, given that committee members care about their own reputations. Nonetheless we can see one reason why a committee is willing to tolerate considerable noise and slack when charged with rewarding quality.

4. Conclusion

We showed how the demand for esteem may affect gambles, individual choice, and labor market institutions. The hypotheses of this paper could, in principle, receive further testing through experimental methods.

In the meantime, we view our arguments as synthesizing behavioral and standard neoclassical approaches to decision theory. A more definite specification of the utility function, involving esteem, may account for behavioral phenomena, but without requiring us to abandon standard neoclassical utility maximization.

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