

An Experimental Look at Social Status Motivations*

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Abstract

We describe a design for an economics experiment which will evaluate the competing methodologies currently in use which include the desire for social status in economic modeling. The two methodologies are: to include a concern for status directly in the utility function, assuming that agents have an innate desire for status and that achieving it will thus increase utility; or to treat status as an instrument to consumption of some good or class of goods which are allocated according to status rather than in the market. This second methodology then presumes that the agents' 'deep' preferences are for consumption and that the observed concern for status is only as an instrument.

The controlled environment of an economic experiment will allow us to observe agents' reactions to the two motivations and collect empirical information on the relative validity of the two methodologies, information which would be difficult, if not impossible, to obtain outside the experimental laboratory setting.

Economists have long recognized that individuals value the esteem of others¹ and that the pursuit of this esteem may effect the economic choices they make. This idea was given its first analytical treatment by Thorstein Veblen (1899) in "The Theory of the Leisure Class" in which he argues that many consumption decisions are made not (or not only) because of the intrinsic utility of the good consumed, but rather for the value of the signal it sends to others, that the consuming agent is of high rank and thus worthy of the esteem of others. In recent years the idea of the desire for social status as a motivator in economic decisions has begun to be incorporated into the formal theoretical literature. Much of this work has built on the ideas of Veblen and attempted to model conspicuous consumption and its consequences (see eg, Corneo and Jeanne (1997) and (1998), Bagwell and Bernheim (1996)), while other work has attempted to use the motivating power of the desire for social status to explain observed irrational behavior such as contributions to public goods (Gann (2001), Seabright (2002)) and the choice of higher than otherwise optimal levels of education (Fershtman, Murphy and Weiss (1996)) and effort (Auriol and Renault (2001)). We are still far from consensus however regarding the particular mechanism through which the desire for social status (hereafter shortened to 'status') influences decision making, and therefore how to incorporate status into the preference relations and utility functions which form the basis for economic analysis.

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¹ For instance, Adam Smith writes: "To what purpose is all the toil and bustle of the world?...It is our vanity which urges us on....It is not wealth that men desire, but the consideration and the good opinion that wait upon riches." Quoted in Cole et al (1992).

The purpose of this experiment is to contribute to the debate by testing how susceptible experimental subjects are to status motivations under the differing assumptions used in the existing literature. This document describes the design of the experiment. Before outlining the experiment, we begin with a description of the controversy.

The Controversy

The fundamental debate in modeling status concerns is described by Andy Postlewaite (an advocate of the instrumental approach):

...a central issue in how we model and analyze problems characterized by such concerns is whether that concern is 'direct' or instrumental. That is, do people care about opinions of others *for their own sake* or because those opinions indirectly affect the goods and services they ... consume?

[Postlewaite (1998), emphasis in the original]

The direct approach includes the status of the individual directly in the utility function so that increasing the status of an individual increases utility where total consumption is held constant. Utility is then modeled as: $U = u(c, s)$ where s represents the status of the individual and $\partial u / \partial s > 0$. In contrast, the instrumental approach defines utility only over consumption, although consumption may be divided into two types of goods, those allocated through markets and those allocated through status, for example: $U = u(c, v(\mathbf{q}))$ where $v(\cdot)$ represents the consumption of the nonmarket good and \mathbf{q} is the vector of status signals sent by all agents which determines the level, or perhaps quality, of the consumption of the good $v(\cdot)$ by each agent. Most often in economic modeling the nonmarket good is a match with other agents, generally a marriage match² (eg Cole et al (1992)) although Seabright (2002) describes the match more generally, as the quality of one's companions.

Direct inclusion of status

The most compelling argument for the direct inclusion of status is an evolutionary one outlined by Postlewaite (1998) and developed more thoroughly in Fershtman and Weiss (1998). The general idea is that if high status had survival consequences, through perhaps receiving higher quality foodstuffs, or priority access to (metaphorical) lifeboats, then the desire for status would have become 'hardwired.' Until and unless high status became evolutionarily harmful, we would retain deep preferences for status, even where there are no longer any survival consequences to status. In the Fershtman and Weiss model, concern for social status may arise as a cheap disciplining method for correcting negative externalities (and encouraging behavior with positive externalities) and so replaces more expensively enforced laws and regulations. In this view, unlike the more general view of Postlewaite, the evolutionary benefit of the status systems continues in modern societies.

Fershtman and Weiss are dedicated advocates of the use of deep preferences for status, which appears in the models in their large body of work on status. In Fershtman, Murphy and Weiss, (1996) they model the choice of education level, and corresponding effect on growth, with status determined by the occupation of the individual. In Fershtman and Weiss (1993) they show the link between the demand for status, the wage structure and aggregate output. And in

² There are many different goods which may be allocated through social, rather than market, relationships. Corneo and Jeanne (1998) list as examples "[m]atings and friendships, invitations to houses and partnerships in sports and games, receiving deference, esteem, sympathy, approval, and courtesy..." All of the economic models of which we are aware however use a matching to model the nonmarket good. As a 'good' match is in the interest of both parties, it avoids the question of why valuable nonmarket goods are freely given, for instance why individuals give esteem to high status members of a society.

Fershtman, Weiss and Hvide (2001) they study firm organization in the presence of status motivations with agents who differ both in their attitude towards status and in their productivity.

Other authors have used this approach as well, without delving so deeply into the reasons for the deep preference for status, but relying on work of sociologists, such as the sociological theories of hierarchies of needs – where for example the need for the esteem of others is considered analogous to the need for nourishment.

Auriol and Renault (2001) use this sociological argument to include a desire for status which increases with income as a direct argument of the utility function in a model of the effects of status concerns in inducing effort in a multi agent model with moral hazard. By having status be a scarce good,³ in their case because of the limited number of for instance, corner offices, they are able to show, among other results, that promotions may be more effective than monetary incentives in a long term work relationship. Gann (2001) uses a similar argument in including an innate desire for status in the utility function to explain why it may be rational for individuals to donate blood, at a cost to themselves.

Other work which has relied, either explicitly or implicitly, on deep preferences for status includes: Corneo and Jeanne (1997) who show the macroeconomic distortions associated with status seeking through conspicuous consumption with a utility function in which the purchase of a positional good offers no intrinsic utility but serves only to signal his status to others. Picketty (1998) investigates social mobility which relies on the public's perception of how 'smart' the agent is. This public perception enters directly into the agents utility function. Bagwell and Bernheim (1996) use a model in which consumers have preferences over an unspecified action to be taken by social contacts, who may come from the entire spectrum of society. Under their formulation, when positive this action may be interpreted as esteem, over which agents have deep preferences.

Reduced form instrumental inclusion of status

The primary objection to including a deep preference for status is that that the success that economists have had in using optimizing agents to predict behavior is dependant upon there being some behavior which is clearly inconsistent with optimizing behavior. Advocates of the instrumental approach are often concerned that the inclusion of status directly in the utility function permits too great a range of outcomes, which are dependent upon the assumptions made by the theoretician regarding how the desire for status might operate. In contrast, modeling status as instrumental in reduced form utility functions (in addition to being a comfortable position for economists) allows us to assume that deep preferences are identical and stable and depend upon standard commodities.

For example, Cole et al. (1992) present a model where people care about status because status determines the quality of their marriage match. They use this framework to model and compare different social organizations, one with social mobility (wealth is status) and an aristocracy (hereditary status), and to explain different growth rates as a result of these different social organizations without resorting to differences in preferences, technologies and endowments.

Seabright (2002) takes a similar approach to modeling the tendency towards civic virtue. In this work, agents are randomly matched with others who send the same signal. The signal is, in

³ This is a fairly common assumption of the literature, though not generally as direct as Auriol and Renault make it, through the allocation of a desirable good. Where status is defined as a ranking, an increase for any individual implies a decrease for another.

effect, the agent's private idiosyncratic benefit from performing his civic duty, and agents receive utility from being matched with others with a high private benefit. The benefit from matching has a single-crossing property, so that a better match is more valuable to those with a higher private benefit. Seabright shows how in this environment providing payment for performing a civic duty, say donating blood, may 'crowd out' gratuitous donations.

Having assumed deep preferences for status in their previous work, Giacomo Corneo and Olivier Jeanne (Corneo and Jeanne (1998)) switch to an instrumental approach to show macroeconomic consequences to status seeking and social segmentation. In the conclusion of this work, they also weigh in in the debate about the appropriate methodological approach to incorporating status concerns in economic models. They acknowledge the benefit of using the reduced form in evaluating different forms of social organization but feel that this benefit is limited, absent some empirical analysis to give structure to the reduced form preferences, which they encourage.

Becker and Stigler (1977) in their seminal essay on endogenous preferences hypothesize that "...widespread and/or persistent human behavior can be explained by a generalized calculus of utility-maximizing behavior, without introducing the qualification 'tastes remaining the same.' It is a thesis that does not permit of direct proof because it is an assertion about the world, not a proposition in logic."

The purpose of this experiment is to shed light upon the 'assertion about the world' regarding the reasons behind agents' observed responsiveness to status motivations, whether there are indeed deep preferences, perhaps with evolutionary origins, for status, or whether the observed preference for status is, in line with Becker and Stigler's argument, merely an instrument to obtaining additional consumption and that the observed behavior may be explained by differences in prices, income or institutions.

The Experiment

The experiment will be conducted within the framework of a contribution to public goods experiment and will consist of a minimum of two sessions with each session involving nine participants who will participate in two treatments consisting of ten periods each. The two treatments in each session will be a control treatment and either an intrinsic status treatment or an instrumental status treatment. In the intrinsic status treatment payoffs are identical to the control with the addition that participants will be grouped by contribution level into gold, silver and bronze groups and informed of their own rank. The instrumental treatment will consist of two rounds in each period. The first round will be used to group the participants into thirds, as in the intrinsic treatment, although they will not be informed of their ranking. In the second round, participants are reendowed and again have the opportunity to contribute, but this time the relevant 'public' is limited to their fellow rank members.

Theory

The participants are presumed to have the following utility function:

$$U_i(x_i, b_i, s_i) = U(\mathbf{w} - c_i + \mathbf{a} \sum_j c_j + v(c_i, c_{j \neq i}), b_i, s_i)$$

where total cash payoff is $x = \mathbf{w} - c_i + \mathbf{a} \sum_j c_j + v(c_i, c_{j \neq i})$, $U()$ is increasing in all of its arguments and:

\mathbf{w} is the initial endowment, constant among participants and treatments;

c_i is the individual contribution level, $c_{j \neq i}$ then the contributions of others, and c the vector of all contributions;

$\mathbf{a} \in (1/n, 1)$ is the marginal per capita return for each contribution, to be established by the experimenter, and known to all participants. $\mathbf{a} > 1/n$ implies that there are benefits to contributing, as the private benefit of each token not contributed yields 1, whereas the total benefit of contributing one unit is $n\mathbf{a} > 1$. $\mathbf{a} < 1/n$ implies that there will be a free riding problem, (ignoring for the moment the payoff from status) as for each individual the marginal payoff from not contributing one unit exceeds the marginal payoff from making the contribution.

$v(c_i, c_{j \neq i})$ is the additional consumption payoff from achieving a particular status and depends upon both the level of i 's contribution, and the distribution of the contributions of others;

$b_i(c)$ is the private benefit, the warm glow, that the agent gets from participating, from doing his civic duty which may depend upon both his own, and others', contribution levels; and

$s_i(c)$ is the idiosyncratic taste for social status, the level of which will depend upon the entire distribution of contributions in the society.

The objective of the experiment is to elicit information regarding the relative motivating power of $s_i(c)$ and $v(c)$ as it contributes to x .

In the control treatment, $v(c) = 0$ and, as participants do not know their contribution levels relative to others, $s_i(c) = 0$. Theory tells us then that contribution levels will be selected to solve the following program:

$$\max_{c_i} E_{j \neq i} [U(\mathbf{w} - c_i + \mathbf{a} \sum_j c_j, b_i(c))]$$

$$s.t. \quad c_i \leq \mathbf{w}$$

The purpose of this treatment is to provide a baseline against which we can evaluate what portion of any increase in contributions which may occur in the following treatments is due to a natural predisposition for high rank and what portion to the additional cash payoff that comes from being in the higher class. In the later treatments, we will be offering an additional payoff to contributing, over and above α . For this reason, we will set α in the low end of the range typically used for these experiments, at 25 or 30%.

With $\alpha < 1$, the solution to the program is $c_i = 0$ and we expect that the contributions will be zero, absent any warm glow effect, which we would not expect to see in this context.

For the following treatments, the solution is more complex, with the optimal level dependant as well on the effect of status level on utility, and contributions on status level for the intrinsic treatment, and the reaction of the matching payoff to contributions for the instrumental treatment. The goal of the experiment is to elicit information about these effects, and, in particular, their relative strengths.

Control Treatment

As noted above, the control treatment will be the standard contribution to a public goods experiment, repeated for ten periods.

The participants will be informed of their own payoff after each period.

Different cohorts will be utilized for the intrinsic and instrumental treatments. The cohort which will go on to play the instrumental treatment (or will have already played) will be subject to a two stage control treatment, in order to be comparable with the instrumental treatment, discussed below. For the control treatment however the matching for stage two will be random.

Intrinsic Treatment

In this treatment the parameters will take the same values as above, except that now after each round, the participants will be ranked according to their contribution levels, as gold, silver and bronze contributors.⁴ The three highest contributors will be ranked gold, the next three silver and the remaining bronze. If necessary, ties among ranks will be broken by randomly assigning rank to the affected participants.

After each period the participants will be informed of his own rank, within the gold, silver and bronze categories, his own payoff and the cutoff levels for each ranking.

The purpose of this treatment is to test for an innate, intrinsic concern for status, defined by the American Heritage Dictionary as position relative to that of others; standing. For this reason it is important that the ranking be anonymous, that is, that each participant knows his own rank but is not informed about the ranks of others. We stress this point because it does seem to be an area of some confusion. Huberman et al (2002) report the results of a recent experiment testing the intrinsic desire for status.

In their experiment, each participant was given an equal number of cards which were identifiable as his own. In the first round, each player decided how many of his cards to put into the pile from which a single card was drawn to determine which participant would win. In the second round, the winner's remaining cards were shuffled with a fixed number of blank cards and a single card was drawn. If this card was blank, the payoff was zero, if it was one of the winners he received a cash payoff. Thus the incentives were such that increasing one's chances of being the winner reduced one's expected cash payoff upon winning.

After a control treatment which was fully anonymous, a second treatment was run in which the winner of the first round was announced, and the other participants were encouraged to applaud and congratulate him. The second round proceeded as in the control treatment. The experimenters found that more cards were contributed in the first round of the second treatment than in the control (particularly by men). They interpret this as evidence of the existence of an intrinsic concern for status. We disagree. The design of the experiment, and the results seem to be stronger evidence of the existence of an effect of status concerns as instrumental to receiving some additional consumption. In this case, it is the recognition and applause of the other participants. That is, the winner of round one, in addition to the opportunity to participate in the lottery of round two, gets as an additional payoff the recognition of the other participants.⁵ The experimental setting permits the avoidance of the problem of equilibrium –

⁴ It has been suggested that we may want to rank according to earnings. We have rejected this alternative, our objective being to mimic seemingly 'irrational' behavior, which describes contribution to a public good, but not seeking higher income.

⁵ The comments of participants quoted in the paper who increased their rent seeking in the first round support this view: "On the one hand, you want to increase the chances of winning the money. On the other hand, you want to get recognition from your peers since you won't get anything by losing in the first game. If you pass, you get the applause and might also get the cash." For women and Scandinavians, who both decreased rent seeking in the

that is, if the recognition is valuable, as this experiment shows to be, why is it freely given? Here, it is given because the participants are being paid to follow instructions, which include giving recognition to the winner.

Our objective is to determine whether it is the desire for status in and of itself which motivates people, separating it from all the other goodies which high status may bring. For this purposes it is important that the individual be informed only of his individual rank and to know that it is not known by others.

Instrumental Treatment

In the instrumental treatment, the participants will be ranked by thirds as in the intrinsic treatment, but rather than being informed of their rank, will be informed prior to the treatment that their ranking will then determine with whom they will play the game in the second round. The three highest contributors from the first round will play amongst each other in the second round, as will the three lowest and the three middle. In order to maintain the relative benefit of contribution, the marginal per capital rate of return on contributions will increase by a factor of three in the second round.

Participants will be informed of their own payoff after round one, so will know whether they are above or below the mean but will not be informed of the rank which they have attained.⁶ They will only know that the second round will be played with participants who contributed an amount 'similar' to their contribution. This mimics the matching feature of the models which rely upon an instrumental inclusion of status concerns. To the extent that the expected payoff to contributions is based upon and increasing in the participant's expectation of the contributions of others, there will be a value to attaining high status through a high contribution, beyond the payoff realized in the first round. This is related to the ideas of Orbell and Dawes (1993), who, testing the theory that people's expectations are based on the principle that others will 'do as I do,' allow participants to opt out of a prisoner's dilemma game where losses are possible. While we do not allow losses in this experiment, free riding in the first round might be seen as an effective opt out of the second, as all of the free riders' 'suckers' will be in other populations for round two.

At the end of each period, so after round two, participants will be informed of their own payoff and of the average (total, two round) payoff of members of each group.

Anticipated Outcomes

Our expectation is that contributions in the control treatments will converge to zero over the course of the ten periods. This is consistent with what has previously been found in public goods experiments with a relatively low payoff as reported in Chapter 6 of Davis and Holt (1993). The modification to the control treatment for the cohorts being tested under the instrumental treatment should not change that outcome.

It is of course an increase (or indeed any change) in contributions in the subsequent treatments which is of interest to us. If the intrinsic hypothesis is correct, and individuals do have an

second treatment, the recognition was seen as an embarrassment, for them the additional consumption for which status was the instrument was of a 'bad' rather than a 'good.'

⁶ As an alternate treatment, participants would not receive information after the first round, but would decide on contributions for the two rounds concurrently. The principle effects of this alteration we think would be upon the second round choice, that is, if participant's know that their first round contribution puts them in the bottom category, with the free riders, they would be expected to decrease their round two contribution. There is strategic value in knowing the information will arrive before the second round choice, which may effect first round choices.

innate concern for their rankings, then we would expect to see both an increase in contributions in the intrinsic treatment and a convergence to the announced cutoff levels from previous rounds, as participants seek to attain status at the lowest cost possible.

If the instrumental hypothesis is correct, and our design accurately describes it, then round one contributions in the instrumental treatment should be different from than in the control, as individuals compete to join the 'better' groups. Although our interest is in the round one behavior – that is how the opportunity to match with other like-minded souls alters behavior – increased contributions in the second round by high first round contributors would be consistent with the results of Orbell and Dawes (1993) who found individuals more willing to cooperate when they could select among potential partners.

We think it likely that both hypotheses are correct, that individuals are motivated by both an intrinsic desire for status and by the additional consumption goods: esteem, desirable spouses, invitations to the 'party table'... that accompany status. In this case, our contribution will be to comment on the relative power of these two effects – where one dominates the other, economists may be justified in constructing models which accommodate only the dominant effect. Alternately, if they both have powerful motivation force, then both should be included in economic models describing the effects of the desire for social status.

References

- Auriol, E. and Renault, R. (2001) "The Costs and Benefits of Symbolic Differentiation in the Work Place", IDEI, working paper 101/00
- Becker, G. and Stigler, G. (1977) "De Gustibus non Est Disputandum", *American Economic Review*, 67(2), reprinted in Becker G., Accounting for Tastes, 1996, Harvard University Press, Cambridge MA.
- Bagwell, L.S., and Bernheim, B.D. (1996), "Veblen Effects in Theory of Conspicuous Consumption", *The American Economic Review*, , 349-373.
- Cole, H.L, Mailath, G.J., and Postlewaite, A. (1992) "Social norms, savings behavior and growth", *Journal of Political Economy* 100(6) 1092-1125.
- Corneo, G. and Jeanne, O. (1997), "Conspicuous consumption, snobbism and conformism", *Journal of Public Economics* 66, 55-71.
- Corneo, G. and Jeanne, O. (1998) "Social organization, status and savings behavior", *Journal of Public Economics*, 70, 37-51.
- Davis, D. and Holt, C. (1993) Experimental Economics, Princeton University Press, Princeton NJ.
- Fershtman, C., Murphy, K. and Weiss, Y (1996) "Social Status, Education and Growth", *Journal of Political Economy*, 104(1), 108-132.
- Fershtman, C. and Weiss, Y. (1993) "Status, Culture and Economic Performance" *The Economic Journal*, 103, 946-959.
- Fershtman, C. and Weiss, Y. (1998) "Social rewards, externalities and stable preferences" *Journal of Public Economics*, 70, 53-73.
- Fershtman, C., Weiss, Y. and Hvide, H.K. (2001) "Status Concerns and the Organization of Work" Foerder Institute for Economic Research, Tel-Aviv University, working paper 2-2001.
- Gann, J. (2001) "Hey Brother can you spare a kidney?" University of Toulouse, MPSE, mimeo.
- Huberman, B.A., Loch, C.H. and Öncüler, A. (2002) "Status as a Valued Resource," working paper, HP laboratories. Accessed from <http://www.hpl.hp.com/shl/people/huberman> 18 June 2002.
- Orbell, J. and Dawes, R. (1993) "Social Welfare, Cooperators' Advantage And The Option Of Not Playing The Game." *American Sociological Review* 58: 787-800.
- Piketty, T. (1998) "Self-fulfilling beliefs about social status", *Journal of Public Economics*, 70, 115-132.
- Postlewaite, A. (1998) "The social basis of interdependent preferences", *European Economic Review*, 42, 779-800.
- Seabright, P. (2002) "Continuous Preferences Can Cause Discontinuous Choices", University of Toulouse, mimeo.
- Veblen, T (1899) The Theory of the Leisure Class, New York, MacMillan.