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A Theory of Association: Social Status, Prices and Markets

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ABSTRACT

The utility from some 'commodities' depends on the allocation rule used to distribute it. If, for example, a prize for excellence in some field is given frequently to the highest bidders, its recipients would feel less happy than they would otherwise. Such goods are called association goods. It is argued that a wide range of commodities have an element of the association good in them and that for such commodities standard theory and prescriptions run into difficulty. For instance, the prescription: "turn the good over to the price mechanism", may not be a good one because the value of the good may be diminished purely by virtue of resorting to the price mechanism to allocate it. This paper examines a variety of association goods, especially club memberships, jobs and school admissions.

1. INTRODUCTION

There are many people who would be glad to pay (on the quiet) large surrs of money in order to be knighted. There are persons who would happily give up the Nobel Prize money and even pay some in order to get the Nobel Prize. However, if the ones responsible for giving these awards and honours frequently sold them to the highest bidders, the awards would become devalued. Some government awards which invariably go to 'loyalists' (that is, people who 'pay' the government with their loyalty), instead of the most deserving, get so devalued that even the loyalists are not flattered when they get them.

This shows that the value to an individual of an award or a prize does not depend on merely its inherent value - for example, the gold in an olympic medal, the money in a prize packet or whatever it is that is used to confer a knighthood. It depends on the allocation rule itself which is used to decide who will receive the awards. If the awards are allocated by a rule which picks the 'best' or most talented, they would have a certain value to the recipients. If they are allocated via the price mechanism (that is, they are given to whoever is willing to pay most) they would have another value.

The present paper looks at a special class of such goods and services. It is a study of commodities (the word 'commodities' being used generally enough to include services, memberships, awards and, of course, commodities), the utility from which depends on who its other recipients (or consumers) are. By buying such a commodity a person tries to gain association, in the eyes of fellow humanbeings, with its other recipients.[1]

The example of people seeking association are many. Much of Veblen's (1899) classic work on the leisure class is on this subject. Sociologists even have a name for the process by which members of lesser castes emulate the customs and rites of the Brahminic groups in order to impress upon fellow humanbeings their improving station in life. They call it Sankritization[2] and as a concept we can find its counterparts in most societies - backward and advanced. As an essay in the New York Times[3], entitled 'The Art of Selling to the Very Rich', notes, "Nobody buys one of Gerry Grinberg's watches to get unbeatably accurate time. Mr. Grinberg admits it. You can get as good time on an $18 watch." As for the reason why they buy such watches, the essay quotes Mr. Grinberg: "People want to show their station in life." People also often try to signal their status by pretending to have certain preferences. Thus among the members of upwardly mobile classes a larger number eat in ethnic restaurants than enjoy eating ethnic food; a larger number profess to enjoy art than actually do.[4]

The subject of association goods is not new in the sense that it lies at the cross-section of many well-known themes: positional goods[5], snob effects[6] and the theory of clubs.[7] Yet the nature of equilibria that arise in the presence of such goods is ill-understood. This paper illustrates the role of association goods in understanding several real-life phenomena, especially the existence of excess-demand and excess-supply equilibria, through a series of simple models.

2. CLUBS

A classic association good is the membership of clubs and societies which restrict admission to social elites and distinguished persons. Such clubs may have some facilities, like swimming pools and libraries, but the real reason why people toil to become members is because of the status associated with being admitted.[8,9]

I shall develop a very simple model mainly to illustrate how association goods may exhibit equilibria with excess demand. I consider a club which is run by a profit-maximising entrepreneur. Before going into a generalised and formal analysis, it may be useful to give an intuitive account. Suppose that there are two kinds of citizens: those who have much status but little money (type 1) and vice versa (type 2). Let us now consider the case where the club has many members of type 1 and a few (perhaps none) of type 2. In addition, there are many type 2 people wanting to be admitted as members and willing to pay more than the going membership fee in order to be admitted.

This is an excess demand situation and at first sight it may appear that this cannot be a profit-maximising equilibrium from the club entrepreneur´s point of view. All he has to do is to take in some of these type 2 people at the higher charge that they are willing to pay (perhaps even replace some type 1 people with type 2) and the club´s profit will rise. This, however, need not be so. Since the club membership is an association good, the act of admitting more type 2 people may change the status rating of the club and make everybody willing to pay less membership fee. Thus excess demand may exist in equilibrium with profit-maximising agents. Any attempt on the part of the club to eliminate the excess demand

by taking in more members or changing the composition of member may change the character of the club, make people less eager to join it and thus lower the club's profit. It should be clear that since my purpose is to explain excess-demand, my job would be easier if the club's objective was something other than profits. Thus my assumption that clubs are run by entrepreneurs who maximise profits is not made in the belief that this is so in reality, but simply to choose an assumption which is adverse from my point of view. With this, let us proceed to a formal analysis.

Let H be the set of all people and, for all i in H, let H(i) be the set of all subsets of H which have i as an element. For all i in H, let v_i be a real-valued mapping on H(i) such that for all $M \epsilon H(i)$, $v_i(M)$ is the maximum amount that i would be willing to pay to be a member of a club in which M is the set of members.[10]

I shall, to start with, assume that the club cannot charge discriminatory fees from its members, and that admitting additional members does not entail any costs on the part of the club entrepreneur. Hence, a club with a set M of members earns a profit of $(\# M) \min_{i \epsilon M} v_i(M)$, where $\# M$ denotes the number of elements in M. The club's aim is to choose a subset M of H which maximises profit. More formally, its aim is to:

$$\max_{M} ((\# M) \min_{i \epsilon M} v_i(M)) \qquad (1)$$

Let M* be a solution of (1). M* may be described as an equilibrium set of members. The equilibrium membership fee is

$$v^* = \min_{i \epsilon M} v_i(M^*)$$

It is easy to show that there may be an excess demand for membership in equilibrium. We shall here say that there is an <u>excess demand</u> for membership if there exists a person j who does not belong to M* and $v_j(M^* \cup \{j\}) > v^*$. In this case j is a person who is willing to pay more than the membership fee to join the club but the club will not admit him.

The possibility of an excess-demand equilibrium may be illustrated with an example. Let H = {1, 2, 3}, and suppose

$$v_1(H) = v_1(\{1, 3\}) = v_1(\{1, 2\}) = 3$$

$$v_2(\{2, 3\}) = v_3(\{2, 3\}) = 2$$

$$v_2(H) = v_3(H) = v_2(\{2\}) = v_2(\{1, 2\})$$

$$= v_3(\{3\}) = v_3(\{1, 3\}) = v_1(\{1\}) = 0$$

We could think of individuals 2 and 3 as men of status (the old nobility). Person 1 would pay a lot to join a club which has 2 or 3 as member. While 1 (the <u>nouveau riche</u>) can pay a lot, he is not quite the coveted person. In fact his being in a club, devalues its membership altogether for 2 and 3.

In the above example, the equilibrium club is one which has 2 and 3 as members and charges a fee of 2. Person 1 is denied membership even though he is willing to pay 3 units, which is more than the membership fee. This is a case of excess-demand equilibium.

Several existing models of excess-demand or excess supply equilibria make use of the assumption of non-discriminatory prices, for example, the

assumption that a firm cannot pay different wages to its workers. In the above model also I use a similar assumption since it was supposed that all members have to be charged the same fee. However, the excess demand result is more robust here in that it would survive a relaxation of the non-discrimination assumption.[11]

Let us consider now a club which is allowed to charge discriminatory fees. Its aim is to choose M (subset of H) so as to maximise profit. Profit is now given by the aggregate of the maximum that each member is willing to pay.

In this case there can be different ways of defining excess demand. Consider the following definition which is the most adverse from my point of view: We shall say that excess demand exists if there is a person j who is not admitted to the club but who is willing pay more than the highest-paying club member. That there can be excess demand in this sense in a case where a club can charge differential fees is obvious from the above numerical example. Person 1 would still be kept out even though he would be willing to pay a larger fee than is being paid by any of the two existing members.

Drawing on our knowledge of social psychology, it may be possible to place restrictions on the v_i-functions. For instance, if we wish to characterise a society where wealth or ability to pay is the only thing which gives an individual social status, we would require a condition as follows: For all M subset of H, such that $M \cap \{k, h\} = \Phi$, for all $i \varepsilon M$,

$v_i(M \cup \{k\}) > v_i(M \cup \{h\}) \leftrightarrow v_k(M \cup \{k\}) > v_h(M \cup \{h\})$.

There may be other ways of formalising this. It may be interesting to pursue the consequences of different restriction on v_i-functions. We could also try to isolate conditions under which there is no excess-demand in equilibrium or under which the equilibrium is unique.[12]

It is instructive to remove one more possible source of misunderstanding. It may appear that the club's ability to discriminate in its choice of members is crucial for the existence of excess-demand equilibria. This is, however, not so. Even if the club is required by law to select its members, for instance, randomly, from among those willing to join the club, it may be in its interest to allow excess demand to persist. I illustrate this here with an example.

Consider the example given at the beginning of this section with two types of citizens. Let us suppose that there are $\bar{n}_1$ citizens of type-1 and $\bar{n}_2$ citizens of type-2. Assume that the club has to charge the same fee from all members and it cannot be discriminatory in choosing members. This last requirement can be formalised in different ways. Consider the following. Let n_i be the number of members of type i admitted to the club and let v denote the membership fee. Now, given any n_1, n_2 and v we can find out the set of people who are willing to pay v or more to join the club. If $\hat{n}_i$ is the number of people willing to pay v or more to be a member of this club, then clearly we could write

$$\hat{n}_i = \hat{n}_i(n_1, n_2, v)$$

of course $\hat{n}_i \geq n_i$ because if someone is a member he must have been willing to pay the membership fee. We shall define a club, (n_1, n_2, v), as <u>non-discriminatory in its selection of members</u>, if

$$\frac{n_1}{n_2} = \frac{\hat{n}_1(n_1, n_2, v)}{\hat{n}_2(n_1, n_2, v)}$$

In other words, it is non-discriminatory if its proportions of different types of members matches the proportions of different types of people who want to be (which includes those who are) members.[13]

The existence of excess-demand equilibria is now established by assuming that the citizens have the following preference. If the club is such that of its members a fraction of at least $\bar{n}_1/(\bar{n}_1 + \bar{n}_2)$ is of type 1 and no more than t are of type 2 where $t < \bar{n}_2$, then type i people are willing to pay a fee of f_i for membership, where $f_2 > f_1 > 0$. For any other composition of members, neither type 1 nor type 2 are willing to pay anything to be members.

It is easy to see that if the firm is not allowed to discriminate in its choice of members, then it is profit maximising for the firm to admit t type-2 members and $(\bar{n}_1/\bar{n}_2)t$ members of type 1 and charge a fee of f_1. This is an equilibrium with excess demand. In fact, there are both type 1 and type 2 people who want to be members (type 2 people, being willing to pay a fee above the going membership fee) but are not admitted.

Related problems arise in the labour market and this is what I turn to presently.

3. JOBS

While people work for money, they also work for the 'recognition' that employment confers. As Sen (1975a, p. 5) observes, "Employment can be a factor in self-esteem and indeed in esteem by others".[14] Taking cue from this and using a more elaborate version of this basic idea, we could argue that not only do certain kinds of employment give recognition, the amount of recognition may vary with the nature of the employing firm or the job.[15] And, one index of the quality of a firm is the quality of the people employed by it. An important reason why a prestigious university is considered prestigious is because of the status of its faculty members. Similarly a firm could be prestigious because it employs MBAs of top management schools and the children of the nobility. Now, if i joins such a firm, most people would associate i with the other employees of the firm. Given that individuals do seek this kind of recognition, it is reasonable to expect that an individual would be willing to work for a distinguished firm for a lower salary than what he would demand from a run-off-the-mill employer.[16]

In order to formally analyse the consequence of association effects, consider a 'firm' (this being the generic name for any employer, including universities) employing professional labourers, for example, managers or academics. Assume that there are two kinds of potential employees: (i) those who hold management degrees and are referred to here as prestige workers (type p) and (ii) the rest, who may be called ordinary workers (type o). In this model a worker's type is given exogenously. It is for reasons of simplicity that I desist from modelling the acquisition of prestige as a part of the theory. All workers are equally productive. That is, the output, X, produced by the firm depends on the total amount of

labour employed by it. If n_i is the number of labourers of type i employed by the firm, then

$$X = X(n_p + n_o),\ X' > 0,\ X'' < 0 \tag{2}$$

The association or status effect is introduced through the assumption that the reservation wages, w_p and w_o (that is, the minimum wages at which workers of types p and o, respectively, would accept the job) depends on what fraction of the firm's employees is prestige labour.[17] In addition, we allow the reservation wages (or supply prices of labour) to depend on the amount of labour of each type employed. Hence,

$$w_p = w_p(q,\ n_p), \tag{3}$$

$$w_o = w_o(q,\ n_o), \tag{4}$$

where $q = n_p/(n_p + n_o)$; and

$$\frac{\partial w_i}{\partial q} < 0,\ \frac{\partial w_i}{\partial n_i} \geq 0,\ i = o,\ p \tag{5}$$

In addition, it is assumed that $w_p(\cdot)$ and $w_o(\cdot)$ are continuous and differentiable functions.

The relation between w_p and n_p (likewise for type-o labourers) is the usual supply curve relation. The second inequality in (5) asserts that supply curves are not downward sloping. The first inequality in (5) captures the idea of association effects.

Assuming that wages are specified in real terms and that all workers of the same type have to be paid the same wage, the firm's profit, R, is given by

$$R(n_p, n_o) = X(n_p + n_o) - w_p(q, n_p)n_p - w_o(q, n_o)n_o$$

The firm's aim is to maximise $R(n_p,n_o)$ by choosing (n_p,n_o). Denoting the solution of this by (n_p^*, n_o^*) (these may be referred to <u>equilibrium</u> values) and assuming that it occurs in the interior, the first-order conditions may be written as:

$$X' - \frac{\partial w_p}{\partial q}\frac{\partial q}{\partial n_p} n_p - \frac{\partial w_p}{\partial n_p} n_p - w_p - \frac{\partial w_o}{\partial q}\frac{\partial q}{\partial n_p} n_o = 0 \qquad (6)$$

$$X' - \frac{\partial w_p}{\partial q}\frac{\partial q}{\partial n_o} n_p - \frac{\partial w_o}{\partial q}\frac{\partial q}{\partial n_o} n_o - \frac{\partial w_o}{\partial n_o} n_o - w_o = 0 \qquad (7)$$

It is easy to check that (5) and (7) imply

$$w_o(q^*, n_o^*) < X'(n_p^* + n_o^*), \qquad (8)$$

where $q^* = n_p^*/(n_p^* + n_o^*)$.

This may, at first sight, look like a well-known consequence of the fact that the firm acts like a monopsonist in the labour market (which renders wage to be less than the marginal product of labour). What is interesting and easy to check is that even if, unlike a monopsonist, the firm is unable to vary w_o by varying n_o, that is, $\partial w_o/\partial n_o = o$, (8) would be true. (8) here is a consequence of the association effect.

What about the wage earned by type-p labourers? In general we cannot limit this. But as we approach the competitive case we get the proposition that not only does the wage earned by type-p workers exceed the wage of the type-o but it exceeds the marginal product of labour. There are several conditions under which this happens. I state and discuss only one here.

Observe that in the determination of w_p (see (3)), n_p operates via two routes: (1) It affects q, which in turn affects w_p. (2) It affects w_p directly. (1) and (2) may be called the <u>association effect</u> and the <u>supply effect</u>. Clearly these two work in opposite directions. As n_p increases, q increases and this results in a fall in w_p. However, since $\partial w_p/\partial n_p > 0$, (see (5)), the direct effect of n_p (i.e. the supply effect) is a positive one. The case which is of special interest here is one where the association effect dominates the supply effect, that is

$$\frac{\partial w_p}{\partial n_p} < \left|\frac{\partial w_p}{\partial q}\right| \frac{\partial q}{\partial n_p} \qquad (9)$$

Since the right-hand side of (9) represents the association effect and the left-side, i.e., $\partial w_p/\partial n_p$, goes to zero as the labour market becomes competitive (that is, this firm is one among many hiring labour), we shall say that <u>the association effect is strong or the labour market is near-competitive</u> if and only if (9) is true.

By using (5) and (6) it is easy to see that if (9) holds, then

$$X'(n_p^* + n_o^*) < w_p(q^*, n_p^*) \qquad (10)$$

What we have established thus far may be summed up in:

Theorem 1 The wage earned by type-o workers is always less than the marginal product of labour. The wage earned by type-p workers exceeds the marginal product of labour if the association effect is strong or the labour market is near-competitive.

It is claimed by many people that the holders of management degrees from well-known institutions are not as productive as their salaries suggest. The above model shows that this may indeed be so.

The above model also explains involuntary unemployment because the firm employs some prestige workers at $w_p(q^*, n_p^*)$, even though there may be an excess supply of ordinary workers (who are of course as productive as type-p workers) offering to work for a smaller wage than this.

Let us now consider a law prohibiting discrimination in wages among labourers of equal productivity which means both types of labourers have to be paid the same wage. In the present model this could have quite unexpected and even adverse affects. Though such a law is a well-meaning intervention it could have consequences which are undesirable. The next theorem and the discussion that follows capture this phenomenon.

Theorem 2 If the association effect is strong or the labour market is near-competitive, then the prohibition of discriminatory wages, would result in either type-p or type-o labour from being totally excluded from the labour market.

<u>Proof</u> If the firm is forced to pay the same wage to all workers, then its profit-function has to be modified from $R(\cdot)$ to $\hat{R}(\cdot)$, defined as follows:

$$\tilde{R}(n_p, n_o) = \begin{cases} X(n_p+n_o) - (n_p+n_o)\max\{(w_p(q, n_p), w_o(q, n_o)\}, \text{ if } n_p, n_o > 0 \\ X(n_p) - n_p w_p(1, n_p), \text{ if } n_p > 0, n_o = 0 \\ X(n_o) - n_o w_o(0, n_o), \text{ if } n_p = 0, n_o > 0 \end{cases}$$

Assume that in equilibrium $n_p^* > 0$ and $n_o^* > 0$. This implies that the first line of the $\tilde{R}$-function is the relevant one. Now, note that if n_p is raised by a small amount, dn_p, then w_p changes by

$$dw_p = [\frac{\partial w_p}{\partial q} \cdot \frac{\partial q}{\partial n_p} + \frac{\partial w_p}{\partial n_p}] dn_p. \qquad (11)$$

This follows directly from (3). By (5) and (9) we see that $dw_p < 0$. Hence if n_p is raised a little and n_o lowered a little, so as to maintain total employment constant, $w_p(q, n_p)$ will fall and ((5) implies) so will $w_o(q, n_o)$. It follows from the $\tilde{R}$-function, that starting from n_p^* and n_o^* if we raise n_p^* and lower n_o^* by the same amount, $\tilde{R}$ will rise. This contradicts the fact that (n_p^*, n_o^*) is an equilibrium and thereby establishes that either $n_p^* = 0$ or $n_o^* = 0$. (Q.E.D.)

Whether the firm will employ only type-p workers or only type-o workers will depend on whether the following condition is true or not:

$$\max_{\{n_p\}} X(n_p) - n_p w_p(1, n_p) \geq \max_{\{n_o\}} X(n_o) - n_o w_o(0, n_o).$$

Clearly, depending on the nature of the production function and the w_p- and w_o-functions the above condition may or may not be true.

The counterpart of theorem 2 in the case of many firms is interesting. It asserts that if intra-firm wage discrimination is prohibited, then the labour market will get completely segregated in the sense that each firm will employ only one type of labour. A more formal statement of this appears in an appendix to this section. In the real world this theorem can manifest itself in a variety of ways. In reality people are often assessed by others not merely in terms of which company they work for but in terms of what rank they hold in which company. In such a case, theorem 2 suggests that companies may have an incentive in creating artificial ranks and reserving some of these only for prestige labour.

While I have stated the above non-discrimination provision in terms of the law, it is entirely possible that customs or a system of social sanctions compel a firm to refrain from what society views as discrimination and, in particular, prevents the firm from paying different wages to types o and p. The persistence of such customs can be explained endogenously, though their roots may lie in distant history (Basu, Jones and Schlicht, 1987; see also Akerlof, 1976; Basu, 1986). This is what renders simplistic debates on the pros and cons of intervention misleading. What a government intervention achieves may in some societies be achieved from a multitude of rational acts on the part of individuals.

Finally, a comment on education. In the signalling model (Arrow, 1973; Spence, 1973), education does not necessarily enhance productivity; but through the working of the general equilibrium, the more educated people turn out to be the more productive (because they are the ones who

find it profitable to acquire education) and they command a higher wage. In the present model if we interpret type-p workers as the educated workers, then we find that the link between education and productivity is even weaker than in the signalling model, because everybody's productivity is the same. Nevertheless, in our model there is a positive relation between education and wage, as in the signalling model. And, indeed, it should be possible to have productivity depend on education and to model association effects as an additional feature.

Appendix to Section 3: Many Firms

The case where many firms compete on the labour market for professional workers is more complex than the model in Section 3. However the kinds of result that we wish to establish would be valid under different specifications of the many-firm model. Here I construct the outlines of a theory.

Suppose there are t firms; and L is the set of labourers which can be partitioned into sets L_p and L_o, denoting the sets of type-p and type-o labourers respectively. Let N_j^i ($i = 1, \ldots, t$; $j = p, o$) be the set of labourers of type j employed by firm i. A full specification of employment, $(N_p^1, N_o^1; N_p^2, N_o^2; \ldots; , N_p^t, N_o^t) \equiv S$ will be described as a <u>situation</u>. We denote the number of elements in N_j^i by n_j^i.

The minimum wage at which firm i can employ its type-j workers, w_j^i, clearly depends on S. Hence

$$w_j^i = w_j^i(S) \tag{12}$$

One can place many restrictions on (12). Two restrictions which would be appropriate here, and stem from the same reasoning as in Section 3, are as follows. If n_j^i remaining constant q^i increases, we would expect w_j^i to decline (association effect). If q^i remaining constant, n_j^i rises, we would expect w_j^i not to fall (upward sloping supply curve).

Though at an aggregate level (12) and the above restrictions are fine, it will be assumed here (as is common in theories of competition) that each firm i believes that it cannot affect wages by varying its labour demand. It feels n_k^i is too small a part of $\sum_j n_k^j$. It is however aware of the association effect <u>since</u> q^i <u>is specific to firm</u> i. So it expects a negative relation between q^i and w_j^i (j = p, o).

Hence firm i's <u>perceived supply functions</u> may be characterised as follows. At each situation, $\bar{S} = (\bar{N}_p^1, \bar{N}_o^1; \ldots; \bar{N}_p^t, \bar{N}_o^t)$, firm i's perceived supply functions are given by

$$\tilde{w}_p^i = \tilde{w}^i(\bar{S}, q^i), \tag{13}$$

and

$$\tilde{w}_p^i = \tilde{w}^i(\bar{S}, q^i), \tag{14}$$

where $q^i = n_p^i/(n_p^i + n_o^i)$ and (13) and (14) satisfy the properties

$$\tilde{w}_j^i(\bar{S}, \bar{q}^i) = w_j^i(\bar{S}), \; j = p, o \tag{15}$$

$$\frac{\partial \tilde{w}_p^i}{\partial q^i} < 0, \; \frac{\partial \tilde{w}_o^i}{\partial q^i} < 0, \tag{16}$$

where $\bar{q}^i = \bar{n}_p^i/(\bar{n}_p^i + \bar{n}_o^i)$.

Condition (15) merely asserts that the firm knows the present situation correctly and (16) shows his awareness of the association effect.

At each situation S, firm i's perceived profit function is given by

$$R^i(\bar{S}, n_p^i, n_o^i) = X^i(n_p^i + n_o^i) - \tilde{w}_p^i(\bar{S}, q^i)n_p^i - \tilde{w}_o^i(\bar{S}, q^i)n_o^i \qquad (17)$$

The firm's aim is to maximise R^i with respect to (n_p^i, n_o^i). Since the firm's choice depends on S, the firm's decision-making is summed up in the function g^i:

$$(n_p^i, n_o^i) = g^i(\bar{S}),$$

where $g^i(\bar{S})$ is firm i's profit-maximising choice of n_p^i and n_o^i, given that the present situation is $\bar{S}$.

A situation is an equilibrium if no one wishes to make a change. More formally, $(\hat{n}_p^1, \hat{n}_o^1; \ldots; \hat{n}_p^t, \hat{n}_o^t) = \hat{S}$ is an <u>equilibrium</u> if for each firm i,

$$(\hat{n}_p^i, \hat{n}_p^i) = g^i(\hat{S}).$$

Assuming the existence of an equilibrium, we can establish results similar to the ones in Section 3:

<u>Theorem A1</u> In each firm, type-p workers get a wage above the marginal product of labour and type-o workers get a wage below the marginal product.

<u>Theorem A2</u> If intra-firm wage discrimination is prohibited, then each firm will employ either only type-p labour or only type-o labour.

The proofs are similar to the proofs of theorems 1 and 2 and are thus omitted. It may be noted that unlike theorems 1 and 2, theorems A1 and A2 do not ask for the fulfilment of condition (9). The reason is obvious: here each firm, being one of many, assumes that it cannot influence wages by simply changing its volume of employment. That is, the elasticity of labour supply is infinite and (9) is automatically satisfied.

4. SCHOOLS

Should schools be allowed to charge discriminatory fees from students? In India many schools and institutes (especially engineering and medical) have often charged special fees from some students. 'Capitation fees', as these are usually called, have led to much criticism and, whenever possible, legislation preventing discriminatory fees. The implicit argument has been that this would lead schools to admit only richer students who are able to pay more. This argument ceases to be valid once we recognise that association effects are usually strong in the domain of schooling. In the presence of association effects one can find parametric situations where discriminatory fees may be, not just efficient, but ethically desirable.

The intuitive idea is this. Suppose that there are four kinds of potential students: clever and rich (cr), clever and poor (cp), mediocre and rich (mr), and mediocre and poor (mp).[18] The term 'clever' is used here simply to denote students who are able to absorb and make good use of education.

The ethical concern here is a limited one: we want to have a system in which cp students are not denied education. What I want to argue is that in the presence of association effects (i) there is no reason why allowing discriminatory fees will necessarily lead to cp students being denied admission and (ii) there are situations where permitting discriminatory fees may in fact mean more cp students will be admitted.

The intuitive idea is this. It is well-known that school-labels help. A student from a college where the average student is brilliant stands a

better chance of getting a good job than if the same student had been to an ordinary college. This is because firms and other employers use school labels as indices of quality. It is often too expensive to test each prospective employee and one uses ones knowledge of a school's general standing to judge its alumni.

Now suppose an entrepreneur (a profit-maximiser) is setting up a school. If he is allowed to charge any and variable fees would he admit only the rich at high fees? The answer is "no" because he will realise that the school's reputation and consequently the fees that the rich are willing to pay depend largely on the average quality of his students. Thus he will always have an eye on taking on good students, if necessary for no fees, because that will enable him to charge a higher fee from the rich. Having a law ensuring non-discriminatory fees may lead him to abandon those who cannot pay altogether.

I construct here a very simple model to illustrate these propositions. Consider a society in which there are $\bar{n}_{cr}$ clever and rich (potential) students. Likewise for $\bar{n}_{cp}$ and $\bar{n}_{mr}$. It is assumed that there are no mediocre and poor students (i.e. $\bar{n}_{mp} = 0$). This is because this category plays no role in the present model excepting for the wholly negative one of complicating the algebra.

Consider now a school in which n_{cr} is the number of clever and rich students and likewise for n_{cp} and n_{mr} (recall that n_{mp} has to be zero). The school's reputation depends on what fraction of its students are clever, that is,

$$q = \frac{n_{cr}+n_{cp}}{n_{cr}+n_{cp}+n_{mr}}$$

Let s be the (present value of) additional salary that a student would get later on in life by virtue of having been to this school. It is assumed that s depends on the reputation of the school, and thus on q.

$$s = s(q) \tag{18}$$

Of course, $\partial s/\partial q \geq 0$. If for all q, $\partial s/\partial q = 0$, there is no association effect. Otherwise, there is.

The rich students are willing to pay school fees up to s(q). That is, they would like to join the school as long as the acquisition of education yields a non-negative net life-time income. The poor are not <u>able</u> to pay this much. For simplicity, we assume that they are willing and able to pay a fraction, $\theta (0 < \theta < 1)$ of s(q), that is, up to $\theta s(q)$. This is easily justified. If we assume that the poor have to borrow money at an interest of r to pay their school fees, then we get exactly the above kind of behaviour with $\theta = 1/(1+r)$. In this sense it is being assumed that the rich have access to money at zero interest rate. All our results would be in tact if we assume that the rich have access to 'cheaper' money than the poor.

It is supposed that educating students does not entail any cost on the part of the school. There is however a maximum number of seats, $\bar{n}$, in the school, so that it cannot admit more students than $\bar{n}$. In order to sharpen the conflict between the clever-and-poor and the mediocre-and-rich, we assume

$$\bar{n}_{cr} < \bar{n}; \quad \bar{n}_{cr} + \bar{n}_{cp} \geq \bar{n}; \quad \bar{n}_{cr} + \bar{n}_{mr} \geq \bar{n} \tag{19}$$

The school's aim is to maximise profit by deciding on how many students of each category to admit. I shall consider two alternative policy regimes:

Case 1 The school can charge any student any fee.

Case 2 The government prohibits discriminatory fees.

I later comment on a third case in which the government actually fixes the school fee or sets an upper bound to it.

In case 1, the profit function is

$$\Pi_1(n_{cr}, n_{mr}, n_{cp}) = n_{cr}\, s(q) + n_{mr} s(q) + n_{cp}\theta s(q) \qquad (20)$$

It is quite obvious that before taking student of any other category, the school will admit all cr-students. Since $\bar{n}_{cr} < \bar{n}$, it follows that the profit function may be simply written as

$$\Pi_1(n_{mr}, n_{cp}) = \bar{n}_{cr} s(q) + n_{mr} s(q) + n_{cp}\theta s(q). \qquad (21)$$

In case 2, since the school cannot charge discriminatory fees it will have to charge all students the fee which the student who is willing to pay the least (among those admitted) is prepared to pay. Hence, the school's profit in case 2, denoted by Π_2 is given by (noting again that n_{cr} will end up equal to $\bar{n}_{cr}$)

$$\Pi_2(n_{mr}, n_{cp}) = \begin{cases} \theta s(q)(\bar{n}_{cr} + n_{mr} + n_{cp}), & \text{if } n_{cp} > 0 \\ s(q)(\bar{n}_{cr} + n_{mr}), & \text{if } n_{cp} = 0 \end{cases} \qquad (22)$$

In both cases the firm's aim is to maximise profit subject to $\bar{n}_{cr} + n_{mr} + n_{cp} \leq \bar{n}$.

In proving the theorems it is useful to first establish a simple proposition concerning case 2:

<u>Lemma 1</u> In case 2, either no cp-students will be admitted or no mr-students will be admitted.

<u>Proof</u> Using stars to denote the firm's optimal choice, suppose $n^*_{cp} > 0$ and $n^*_{mr} > 0$. Hence, the top line of equation (22) is relevant. If the school increases the number of cp-students a little and decreases mr-students by the same amount (by (19), it is possible to do this), then q would rise, and hence s(q) would rise. Since $\bar{n}_{cr} + n_{mr} + n_{cp}$ remains unchanged, the profit would rise by virtue of this adjustment. Hence the original situation could not have been optimal for the firm. (Q.E.D.)

The proof of Lemma 1 may give the impression that it is never worthwhile admitting cp-students. This is wrong because there is a discontinuity in profit where $n_{cp} = 0$ and it is easy to check that

$$\max_{n_{mr}} \Pi_2(n_{mr}, 0) > \lim_{n_{cp} \to 0} \max_{n_{mr}} \Pi_2 (n_{mr}, n_{cp}).$$

The advantage of Lemma 1 is that the profit function (22) can now be written simply as

$$\Pi_2(n_{mr}, n_{cp}) = \begin{cases} \theta s(1)(\bar{n}_{cr} + n_{cp}), & \text{if } n_{cp} > 0 \\ s(q)(\bar{n}_{cr} + n_{mr}), & \text{if } n_{cp} = 0 \end{cases}$$

It is quite obvious from the above that if the school decides to admit cp-students it is best to fill up all seats in the school, that is, admit $n - \bar{n}_{cr}$ students of type cp. It follows that π_2 can be written even more simply as

$$\pi_2(n_{mr}) = \max \{\theta s(1)\bar{n}, \max_{n_{mr} \leq \bar{n}-\bar{n}_{cr}} s\left(\frac{\bar{n}_{cr}}{\bar{n}_{cr}+n_{mr}}\right)(\bar{n}_{cr} + n_{mr})\} \qquad (23)$$

<u>Theorem 3</u> In case 1 the seats in the school are always filled. In case 2 it is possible to have an equilibrium where seats are left vacant <u>and</u> students are denied admission.

<u>Proof</u> Consider case 1, and suppose the school has vacant seats. If it admits more cp-students clearly q will either rise or remain constant. Hence, all terms on the right-hand side of (21) will either remain constant or rise and the last term will certainly rise. Hence profit rises. This guarantees that all seats will be filled.

Now consider case 2. From Lemma 1 we know that the profit function will be as in (23). Clearly if θ is sufficiently small, the right-hand term within the parenthesis in (23) will be relevant. Given that our only restriction on the s(q) function is that $s'(q) \geq 0$, clearly there can be an s(q) function such that

$$\hat{n}_{mr} \equiv \underset{n_{mr}}{\operatorname{argmax}} \; s\left(\frac{\bar{n}_{cr}}{\bar{n}_{cr}+n_{mr}}\right)(\bar{n}_{cr} + n_{mr}) < \bar{n} - \bar{n}_{cr} \qquad (24)$$

In such a case the school will admit $\hat{n}_{mr}$ students of type mr, since that maximises (23). By (24), the total number of students admitted to the school, $\bar{n}_{cr} + \hat{n}_{mr}$, is less than $\bar{n}$. By (19), there are more mr-students in society (i.e. $\bar{n}_{mr} - \hat{n}_{mr} > 0$) who would be willing to pay the school fees and be admitted to the school. (Q.E.D.)

Theorem 3 shows that with association effects we could have in equilibrium what is usually found only in disequilibrium situations, namely, unutilized resources both on the supply and demand sides.

<u>Theorem 4</u> There is a class of situations where a law requiring that all students be charged the same fees would result in the cp-students being refused admission; and the revocation of such a law would mean that cp-students would be admitted.

<u>Proof</u> From theorem 3 we know that in case 2 there are situations where some seats are left vacant; and from the proof of theorem 3 we know that whenever this happens, only mr-students are admitted to the school (i.e., of course, after first admitting all cr-students). Consider such a situation. Hence,

$$\text{argmax} \quad \Pi_2(n_{mr}, n_{cp}) = (n^*_{mr}, 0) \tag{25}$$

$$\text{and} \quad n^*_{mr} < \bar{n} - \bar{n}_{cr}$$

(21) and (22) imply

$$\max_{n_{mr}} \Pi_1(n_{mr}, 0) = \max_{n_{mr}} \Pi_2(n_{mr}, 0) \tag{26}$$

Since $n^*_{mr} < \bar{n} - \bar{n}_{cr}$, it follows that if $n_{cp} = 0$, it is best for the school in case 1 to leave vacant seats (see 25 and 26). Starting from this situation if (in case 1) the school admits some cp students, Π_1, must rise since q will rise.

What we have established therefore is this. There exists n_{mr}, n_{cp} such that $n_{mr} + n_{cp} \leq \bar{n} - \bar{n}_{cr}$ and $\Pi_1 (n_{mr}, n_{cp}) > \max_{n_{mr}} \Pi_1(n_{mr}, 0)$. This, coupled with (26), means that the revocation of a law prohibiting discriminatory fees (i.e. a switch from case 2 to case 1) would result in cp-students being admitted. (Q.E.D.)

One could utilize the framework of this section to analyse other questions, in particular, the consequence of

(A) fixing the fees (i.e., the case where the government not only prohibits discriminatory fees but actually fixes the fee at some level).

(B) setting an upper limit on the fees (i.e., discriminatory fees are allowed but they must not exceed a certain level).

Instead of analysing these formally, I shall make some brief comments drawing on the intuition already established in this section. Also, I tend to focus on how (A) and (B) could have effects which are unexpected and the opposite of what usually motivates the enactment of such laws. It will indeed be a fallacy to treat the could as will.

The adverse effect of (A) on the poorest sections is obvious. In reality, unlike in our model, there are many levels of poverty. So no matter where the fees are fixed the poorest sections would be unable to pay for their education. In our model if, for instance, the fee is above $\theta s(1)$.

then none of the poor students (clever or mediocre) would be able join the school.

Indeed, (A) is unrealistic. No government would have such a policy, because presumably no government would prevent schools from giving scholarships and assistance to some chosen students. Now, a system of fixed fees with scholarships to some is effectively system (B), which sets an upper limit on students' fees. So let us turn to analysing the consequence of (B). This is best done in two stages. First consider (A) and then analyse the effect of a switch to (B).

Consider first a case where the school fee was fixed (by law) at a level, $\hat{f}$, which is above $s\theta(1)$. As just discussed, none of the poor will be admitted to school because they are unable to pay the school fees. Now suppose that the law is changed to type (B), with $\hat{f}$ being treated as an upper limit. That is, the government now allows the school to lower the fees for some students if it so wishes. So now the school can, in principle, reach out to the poorer students who were earlier priced out of the market. The question is, will it? Consider the reason why the school may want to lower the fees for some students. This could only be in order to admit some clever-and-poor students which would improve the school's academic rating and thereby allow it (i) to charge higher fees from the rich students, or (ii), in case there were vacant seats in the original equilibrium, to admit more rich students at the ceiling fee. It is immediately obvious that in the case where the seats are full when only one fee is allowed, the option of lowering the fees will not be exercised if the school is not allowed to <u>raise</u> anyone's fee. The maximum-fee law, by cutting off the the school's option of raising the fees on the rich, cuts off its incentive to make concessions to students who are good but unable

to pay their fees for reasons of poverty. A piecemeal, well-meaning policy may have effects which are adverse in terms of the same norms which may have prompted the policy in the first place.

5. COMMENTS ON RELATED TOPICS

5.1 Prizes

There is now a considerable literature in economics on prizes (see, eg., Lazear and Rosen, 1981; Nalebuff and Stiglitz, 1983; Rosen, 1986). In this literature a prize distinguishes itself from other systems of rewards, eg., wages, by virtue of the fact that several people toil for it but one (or perhaps few) gets the award in the end on the basis of ones relative performance. The others get nothing for their toil. This leads to many interesting questions but those are not my concern here. What this literature does not consider is that a prize usually gives its recipient recognition. To that extent it belongs to the class of association goods, like club membership, jobs or schools. This immediately means, as is obvious from the models in the earlier sections, that the granting of prizes is a strategic variable in the hands of the prize-giver. The prize-giver can optimise his own profit, utility or whatever he is trying to maximise by suitably selecting the recipients and extracting payments in kind or as return-favours out of them. This objective may not always coincide with that of selecting the most deserving people. However, the prize-giver does have the incentive not to deviate too far from selecting deserving people because that may diminish the worth of the prize and once that happens he would no longer be able to 'sell' the prize, that is, exchange it for whatever his objective is.

From the above remarks it is clear that prizes can be modelled much like the theory of clubs in Section 2. If we think of the prize-giver as the club-entrepreneur and the group of prize-recipients as club members, the same kind of theorising becomes possible, There is one interesting

additional feature here, though. Prize-giving is usually a periodic affair (olympic medals once every four years, Nobel prizes once each year, etc.) which means time is a more pronounced element in the activity of prize-giving than in a theory of clubs. This introduces some special elements. For instance, if the prize-giver is myopic in the sense of having a high time discount, then in any particular year he may be more inclined to selling the award to the highest bidder[19] than giving to the most-deserving. Of course, this means that the following year's highest bidder will be willing to pay less (because the prize is a little devalued) and the process continues till the prize is totally devalued. The same would have a greater tendency to occur if each year a new selection committee chooses the recipients of the prize. The future value of the prize will be less in its interest than it would be in the case of a more permanent committee.

5.2 Snobs

In a celebrated paper, Leibenstein (1950) had analysed the consequences of snobbery and bandwagon effects for the theory of consumer demand. Leibenstein's snobbery as well as some related ideas in the literature (see Frank, 1985a; Basu, 1987a) could be formally characterised as special cases of association effects.

The snob effect in Leibenstein's work stems from the urge towards exclusivity. This is formally defined as a property of an individual's utility function whereby his utility from a good increases if its aggregate consumption in the economy decreases.[20]

This exclusivity property in consumer demand can be modelled in other ways. Leibenstein's own paper has a lucid discussion of the case where a higher price makes a good more attractive to the consumer.[21] In Basu (1987a) I model the case where individuals value a good more if others seek but fail to acquire it, or if there is visible excess demand for it. This could be for reasons of quality uncertainty or social status. An example of the former is the fact that a doctor's queue is often reassuring for the new patient. An example of the latter is the membership of some clubs or societies which are valued precisely because there are many who want to become members but fail to do so.[22]

5.3 Sanskritization

Finally, a comment on Sanskritization which is one of the purest manifestations of association activity. This, as already briefly discussed above, refers to rituals, customs and behaviour which the castes or classes at the lower end of a society's accepted hierarchy adopt in order to signal to others their improving station in life.[23]

Sanskritization cannot be analysed in the same way as we have analysed clubs, jobs or schools, because an elite group or caste is not an entity whose membership is managed by an agent to achieve some objective. Nevertheless, it raises an interesting question in the light of our models. Clearly for the membership of some group to be an association good, that is, for others to want to join it, there must be (a) some ways for outsiders to enter the group and (b) costs involved in joining the group. If (a) is violated (eg., if some firm has an inviolable commitment to employing workers of a particular race) then outsiders would not try to join the group and it would not be an association good. If (b) is violated,

then outsiders would continue to rush in as long as there is value in joining the group. Its membership, in other words, would cease to be an association good in equilibrium.

The fact that Sanskritization at all exists raises the question as to what are the costs of Sanskritization. Though the 'elites' of a society form a nebulous collection and no one charges an entry fee for joining them, there must exist hidden charges; and, indeed, there are. In the context of caste societies, these take the form of ridicule if one attempts Sanskritization and fails. Thus the cost is an expected cost but sure enough it is there. This is brought out very clearly in Srinivas's (1955) essay on a southern Indian village (p. 24): "Discrimination against the Smiths occurs everywhere in peninsular India, possibly as a result of their attempts in the past to rise high in the caste hierarchy by means of a through Sanskritization of their customs" (my italics). He goes on to make similar observations about the Kammālans of Tamil Nadu.

Using the theories of association developed in this paper, it ought to be possible to formalise the concept of Sanskritization. Such a formalisation in conjunction with Akerlof's model of customs could give us some insights into the dynamics of customs and mores.

6. CONCLUSIONS

Association goods complicate policy questions. It is well-known that a lot of corruption (eg., bribery) germinates from the existence of goods and services which are not distributed through the price mechanism. To this a standard response has been to suggest that we simply turn these goods over to the price mechanism. This prescription runs into difficulty if the good in question happens to be an association good. In that case, as discussed in Section 1, the value of the good itself may depend on the mechanism used to allocate it and may be diminished by a resort to a particular mechanism.

I shall, however, put aside policy issues here and briefly comment instead on two important subjects which I have not taken up in this paper but which deserve analysis in future. These are general equilibrium and welfare. It would be valuable to construct a general equilibrium model where one commodity happens to be an association good. A simple way to model this would be to suppose that there are h individuals and n goods and the nth good is an association good. Let x_j^i be the number of units of good j consumed by person i. Let $x_n^{\sim i} = (x_n^1, \ldots, x_n^{i-1}, x_n^{i+1}, \ldots, x_n^h)$. Person i's utility function could be defined as follows:

$$u^i = u^i(x_1^i, \ldots, x_n^i, x_n^{\sim i}).$$

The utility function would have the usual restrictions plus the following one: If $x_n^i = 0$, then changes in $x_n^{\sim i}$ cannot affect u^i.

The unusual variable in the utility function is $x_n^{\sim i}$. But its presence is easy to understand. Since n is an association good, the value of

consuming this good to an individual depends on who else is consuming this good, i.e. $x_n^{\sim i}$. One could of course impose more restrictions than the one imposed above. For instance, we could define a priori a set of people, among the h, who have social status, and then require that if $x_n^i > 0$, u^i will go up if $x_n^{\sim i}$ changes such that the total amount of good consumed by those with social status increases.

If we assume now that each person has an initial endowment of each of the goods (as a special case, considering the possibility that one person owns the entire endowment of good n) we could conduct an analysis of some standard questions like whether an equilibrium exists and whether the equilibrium will be Pareto-optimal.

The existence and the welfare question gets much harder conceptually, if we allow for the possibility that for an association good there need not be an initial endowment in the same way that endowments are assumed to exist for goods in standard economic theory. This is because association goods can, in reality, often be created. For instance, giving people certificates or giving them honorary titles are acts which, in principle, any agent can undertake and with virtually no resource being used. It is difficult to think of a technological or resource-based upper bound on the number of certificates that can be given in an economy. It is necessary to think of the bounds on certificates, honours and awards in very different terms from the bounds on guns, butter or even hair-cuts.

These are some of the open problems which the present paper brings to light. These problems are likely to be interesting but also conceptually difficult. Sufficiently so, to call this present essay to a close.

FOOTNOTES

1. It is worth mentioning that in this paper, no distinction is made between an allocation rule and the final profile of its distribution. That is, if two different allocation rules result in the same distribution of the good in question then they are not two distinct allocation rules but the same one. This assumption is justified in a large and complex economy where people do not get to observe the actual process of decision as to how a good is allocated but infer it from the ultimate distribution which they can observe. This is what makes an 'association' good a special case of goods which are valued according to the allocation rule used.

2. Originally developed by Srinivas (1952), the concept has undergone several extensions and modifications. See, for example, Staal (1963).

3. Written by N.R. Kleinfield in the New York Times, Business section, of 15 June 1986.

4. And here is Veblen on the reason for some people's demand for alcohol and stimulants (p. 70): "Drunkenness and the other pathological consequences of the free use of stimulants therefore tend in their turn to become honorific, as being a mark, at the second remove, of the superior status of those who are able to afford the indulgence."

5. This influential concept was developed by Hirsch (1977), though he did not pursue its implications for market equilibria far enough. Similar ideas, albeit in more diluted form can be traced further back in time

to, especially, Wicksteed (1910). A recent revival of this approach occurs in Frank (1985a).

6. The best-known work on this being that of Leibenstein (1950).

7. This is discussed in Section 1 below.

8. There may be reasons, quite unconnected with status, why people want to belong to certain clubs or communities. This could be because a sense of belonging is often an end in itself (this is discussed by Hirschman, 1985) or it is the basis of "well-being" (Rainwater, 1974). However, to the extent that people have preferences over belonging to different groups, the formal structure of my model would remain applicable.

9. There is a large and interesting literature on clubs, beginning with Buchanan's (1965) investigation (see, for example, Ng, 1973; Sandler and Tschirhart, 1980). However these papers view clubs mainly as institutions for sharing resources which have some attributes of the public good. Clubs which people join for reasons of association, the kind of club that I am discussing here, has an extremely brief literature (see, eg. McGuire, 1972) but widespread existence in reality.

10. For someone like Groucho Marx who said he would never pay to join a club which would have him as a member, $v_i(M) \leq 0$ for all $M \in H(i)$.

11. What constitutes 'no-discrimination' can have several formal interpretations (Basu, 1987b) but here I take the simple meaning of 'same fees from all'.

12. Another useful direction of enquiry is concerning the objective function of clubs and the determination of who the decision-maker is. In Buchanan's (1965) model of clubs all individuals are identical and so a representative individual's attempt to maximise utility is what determines club size. With heterogeneous agents the problem is more serious. There can be models where there are fairly well-defined existing members who are the collective decision-makers. This is the assumption in Walzer's (1983) construction, which deals with a broader notion of membership and goes into questions of not only clubs but immigration. There is an interesting theoretical question even here concerning dynamics. Suppose that at each stage the existing members decide on who will be the next batch of new entrants. Then, to the extent that the new entrants will have a say in future rounds about future entrants, the current incumbents will take into account the preferences of the outsiders in doing their calculus of deciding whom to admit.

13. I use this non-stochastic definition for simplicity. For a discussion of a criterion which allows for random errors and is a generalization of my definition, see Ashenfelter and Oaxaco (1987) and, in particular, their discussion of the interesting court case of Castaneda v. Partida.

14. And, of course, the two may be inter-related. As Veblen (p. 30) had so pithily noted, "... the usual basis of self-respect is the respect accorded by one's neighbours."

15. This is implied by Sen's (1975b) observation "... people may in fact prefer to receive income for work rather than be on the dole", because being on the dole could, in the abstract, be thought of as a certain 'job'.

16. For some indirectly corroborative evidence, see Jencks, Perman and Rainwater (1985) and, especially, their reference to Siegel's findings.

17. This should make it clear that my p and o are not euphemisms for w and b. In models of racial discrimination each group prefers to cluster with its own types (Becker, 1957; Schelling, 1972). In addition, it is often assumed that employers prefer to employ labourers of their own race. While Akerlof's (1976, 1980) model is very different from this it is also very distinct from my model of status. In Akerlof, people have no a priori associative preference one way or the other. They have conjectures about interpersonal preferences. Though these conjectures have no exogenous basis, they are corroborated in equilibrium.

18. Any association of this acronym with that of member of parliament is entirely spurious. In addition, the second epithet is quite inappropriate for parliamentarians.

19. A highest bidder should not be interpreted automatically as the person willing to pay the largest amount of money. Instead he could pay in

other forms. Eg. he could give the prize-giver a good job, or give him some other prize over the distribution of which he has control. The many subtle ways in which exchange can occur (often under the guise of favours) is discussed in Basu (1986, section IV).

20. Pigou (1920, p. 226) is on to something very similar when he asserts: "Among commodities, the desire for which is partly a desire to possess what other people do not possess, the creation of the 1000th unit adds to aggregate satisfaction less satisfaction than it carries itself, because it makes every unit of the commodity more common".

21. See also Scitovsky (1944) for an excellent discussion of the consequences of judging quality by price. A recent and formal analysis of some of these issues appears in Leruth (1987).

22. For yet another characterization based on percentile rankings, see Frank (1985b).

23. Demonstration effects, international or within a society (Duesenberry, 1949; James, 1987) are manifestations of a similar phenomenon in the domain of consumption.

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