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by

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IT PAYS TO DO GOOD, BUT NOT TO DO MORE

GOOD THAN IT PAYS: A NOTE ON THE SURVIVAL OF ALTRUISM*

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"It pays to do good, and it does not pay to do bad".

- proverb, a proof of which is presented in Gary Becker, "Crime and Punishment: An Economic Approach" Journal of Political Economy, V. 76, March/April, 1968.

Becker has recently tried to explain the survival of altruistic preferences on the ground that in certain circumstances, altruism "pays", i.e., that although altruism initially implies a reduction in one's own consumption (or fitness) in order to increase the consumption or fitness of others, when all the effects of altruistic actions are taken into account, the consumption of altruists is higher than that of otherwise similar egoists. [Becker, 1976] The reason is that the altruist's beneficiaries, even though perfectly selfish, are discouraged by his altruism from taking actions which benefit themselves at the expense of harming him, since in so doing they would reduce his future contributions to their own consumption. If the damages they would otherwise have inflicted on the altruist exceed the cost of his contributions to them, then altruism "pays", i.e. the altruist will be better off and hence more likely to

survive than an equally able egoist in the same circumstances.

In this note, I shall demonstrate that Becker's proof only holds if one makes a highly specific and rather strange assumption, namely that beneficiaries know and can systematically anticipate the actions of donors, but that donors cannot similarly anticipate the actions of beneficiaries. If, on the contrary, donor and beneficiaries are symmetrically informed, I will show that it is egoism and not altruism which has survival value.

To make his case, Becker distinguishes "true" altruism from the class of actions which sociobiologists have labelled "reciprocal altruism" [Trivers, 1971], and sociologists call social exchange [Blau 1964, Homans, 1961] In social exchange, "a person helps others in the expectation or hope that he will be helped by them in the future." [Becker, 1976, p.821] Social exchange simulates altruism because there is a "donation" made, for which nothing is immediately received in return. It is not altruism however, for in social exchange there is another side to the transaction: the expectation of reciprocity in the future. Where this reciprocity is not expected, or not expected in sufficient amounts, the donations will not be made.[1]

The essential difference between social exchange and true altruism may be put simply. In social exchange the donor's utility depends only only his own consumption; he does not care about the recipient's welfare. In altruistic behaviour, on the other hand, the donor's welfare does depend directly on the consumption level of the recipient; it is this utility interdependence, and not the expectation of reciprocity in the future, which provides the motive for giving. It is true altruism, Becker emphasizes, whose potential survival is the focus of his analysis. That

reciprocal altruism or social exchange could promote survival is an important proposition,[2] though one that is hardly surprising. Another way to state our central point, however, is that it is this proposition, rather than one about the survival of "true" altruism which is all that can be validly deduced from Becker's analysis.

To proceed, it will be helpful to use Hirshleifer's diagram, [Hirshleifer, 1977] reproduced, with minor changes, as fig. 1 below. The donor is the father, who may or may not be altruistic, and the recipient his selfish ("rotten") kid.

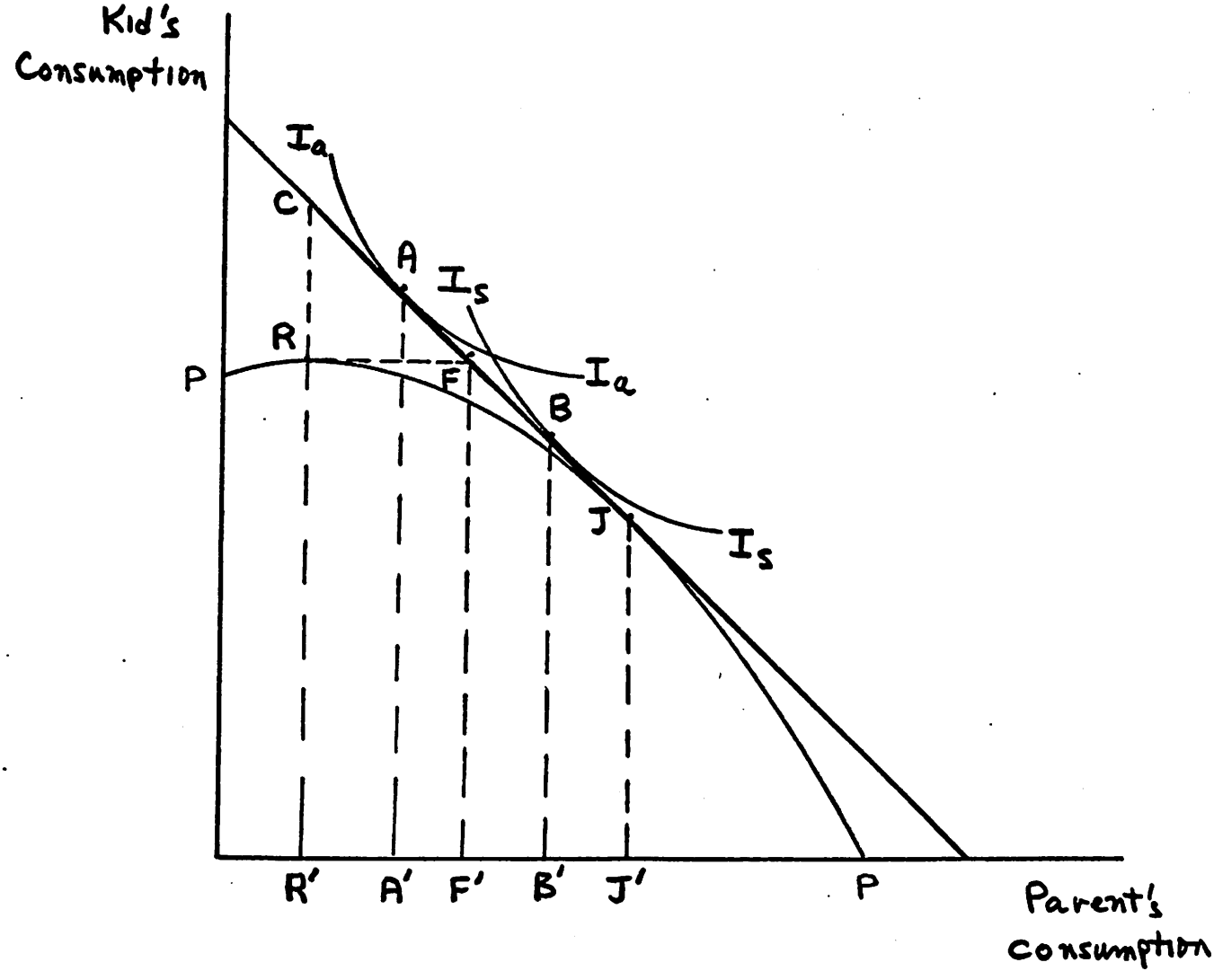

Figure 1.

P-P is their joint production possibility curve. The kid's own production is maximized at R. Becker's argument is as follows. If the father's indifference curves are like I_s I_s, then if the kid were to choose the joint maximum point J rather than R, the father would transfer some resources to the kid, and the kid's consumption is equal to BB' rather than RR'. Since BB' is less than RR', the kid loses by this exchange; anticipating this, he will remain at R. However, if the father were more altruistic, with indifference curves like I_a I_a the kid's consumption after the transfer is AA', larger than RR'. Anticipating this, the kid chooses J rather than R. The kid is better off at A than at R but so is the father. Hence altruism pays: when the father is more altruistic, his own consumption level is higher.

Now this proof is valid only if several assumptions are made. First, it is necessary to assume (as Hirshleifer emphasizes)[3] that the kid correctly anticipates the extent of his father's altruism, i.e. the amount of resources which will be transferred to him in the father's move from J to A. For example, if he does not anticipate any transfer, he will consider himself better off at R than at J, and no amount of altruism on the father's part will induce him to choose J. To put it differently, altruism does not pay when the beneficiary is not only rotten, but stupid.

However, Becker's contention that under some conditions, it is reasonable to assume this knowledge is plausible. Indeed, it is the assumption of this knowledge combined with that of sufficient interdependence between the parties involved (the beneficiary does have systematic opportunities to help himself at the expense of inflicting substantial harm to the donor), which form the basis for Becker's contention that altruism can benefit altruists only when there is substantial interaction between them and the beneficiaries.[4]

But the argument requires an additional assumption which is inconsistent with this approach: for altruism to pay, the father must not be able to anticipate thereactions of beneficiaries to his altruism. To show why this assumption is essential assume the contrary, i.e. that both donor and beneficiary correctly anticipate each other's reactions. Then it is easy to show that the own consumption of the egoistic father exceeds that of the altruist. The egoist will transfer to the kid an amount just sufficient to induce the kid to choose J rather than R, i.e.he offers FF' (RR' plus ε - a chocolate bar?) Since the kid correctly anticipates that he can obtain more for himself by choosing J rather than R, he does so, and the final position is at F. The altruist will, by definition, transfer more resources to the kid than this, and therefore the final position when the father is altruistic will be north west of F, (e.g., at A). The extent of his altruistic giving is AA'-FF', and not AA'-JJ', as long as the altruist knows that FF'-JJ' is required merely to obtain the reciprocal "donation" of J'-R'. Clearly, in equilibrium the own consumption of the altruistic father is less than that of the egoist.

The exact process by which the exchange between egoistic father and son takes place-- whether by explicit agreement between (rotten) father and son, by "social exchange"(reciprocity is merely expected and not contractually agreed to), or by "simulated" altruism on the part of the father, is unimportant. What is important is that, so long as the egoist can anticipate the minimum amount of the transfer required to induce "cooperation" from his kid,(just as the kid does this in making his decision whether to cooperate or not) he is better off than an altruist with the same information.

To summarize, donations to others pay, whether made in the interest of altruism or social exchange, only if the donor is systematically repaid by his beneficiaries by more than the cost of his contributions to them, i.e., if the expected return on the donations (investments) is positive. But if this were the case, egoists would invest as well as "true" altruists. The only difference between them, is that egoists will invest just to the point where it pays while altruists will invest beyond this margin of profitability since their acts of altruism yield utility directly.

In Becker's analysis, the egoist does not know that sufficient transfers on his part will induce his rotten kid to act cooperatively rather than selfishly; hence, he ends up at R. It is this lack of information, rather than the extent of his altruism, which leads to Becker's result. And altruism pays because, although uninformed about the consequences of his actions for his own consumption, the altruist mindlessly happens to choose the level of transfers which pay off. (the increase in the father's own consumption from the kid's move from R to J exceeds the amount of the father's gift.)[5] The only difference between Becker's analysis and ours is that we assume that if donations do systematically pay, and if recipients anticipate this (as they must, otherwise the donations will not pay), then donors will come to anticipate this as well. If they do, the own consumption of egoistic donors will in equilibrium exceed that of altruists.[6]

We now consider two possible objections to our analysis. Firstly, if our model is interpreted as a bargaining model, it may be objected that the two parties should end up, not at F, but somewhere north west

of F, since the kid, knowing that his cooperation is worth more than a chocolate bar to his parent, will bargain for more. The relevant question, however, is whether the introduction of bargaining considerations into the model alters the relative positions of the altruistic and egoistic parent vis-a-vis their respective beneficiaries. For the kid bargains also when his father is altruistic (since he is, after all, rotten) and therefore it may similarly be objected, with respect to that case, that the two parties should end up somewhere north west of A rather than at A.

More generally, whichever model of the bargaining process one chooses, it is unreasonable to propose an equilibrium in which the altruistic father ends up with more own consumption than the egoistic one. The only effect of altruism on the father's part is to increase the kid's minimum payoff from FF' to AA', i.e. to change the negotiation set from CF to CA. The midpoint of the altruistic negotiation set CA (the Nash) solution if utilities are symmetric), for example, is always to the north west of that of the egoistic negotiation set CF.

A second possible objection is that our result only holds when transactions costs are sufficiently low that exchanges are possible. This is likely, since the assumptions of continual interaction and costless resource transfers would appear to be applicable only where bargaining costs are low. If overt communication and bargaining are nevertheless ruled out, it remains true that continual interaction (repetitive playing of the game) essentially substitutes for these conditions, since the two parties can "signal" to each other via their previous choices, as well as by communicating directly.[7]

In any case, let us briefly investigate the consequences of introducing bargaining costs into the model. Becker argues that where transactions costs are high the rotten kid theorem is "a powerful substitute for the Coase theorem",[8] since it automatically maximizes group income [whereas] government responses or the Coase theorem (on private bargaining) do not".[9]

However, if bargaining costs are sizeable, there would appear to be nothing "automatic" about the rotten kid theorem. According to that theorem, the kid chooses J rather than R in order to obtain more via transfers from his parent than he can get from himself at R; there is nothing to prevent the kid from bluffing, threatening, or actually withholding this sacrifice, in order to get still more from his altruistic parent, i.e., more than the parent is willing to give. Moreover, the kid's bargaining converts the situation into a bargaining one from the father's point of view; if they both end up at R, they are both worse off. Hence the kid's bargaining induces the father to bargain in return, despite his altruism. Consequently, in the presence of bargaining costs, there is nothing to prevent an altruistic parent and his rotten kid from ending up at R, and there is no reason that I can discover why they should be any less likely to end up there than when they are both egoists. Of course, continual interaction between father and son tends to lead them to the cooperative solution J rather than R. The point is that if bargaining costs do inhibit cooperation, they will inhibit cooperation between altruist and egoist as well as between egoists.

Alternatively, perhaps what Becker has in mind when he states that altruism automatically maximizes group income despite the presence of trans-

action costs is that no bargaining is allowed to take place. Group income is maximized "automatically" because the altruistic parent simply offers AA' to the kid, period after period; facing a simple two-sided choice between RR' and AA', the kid chooses to cooperate. If this is the scenario, then, our earlier analysis applies, and an egoist can do better; he simply offers FF' to the kid, period after period, and obtains the kid's cooperation at lower cost to his own consumption than does the altruist.

FOOTNOTES

1. Both the terms reciprocal altruism and social exchange are somewhat misleading as a description of this class of actions, since neither altruism nor exchange in the ordinary sense are involved. They are essentially investments, since a current sacrifice is made in the interests of future consumption, and since reciprocity is anticipated, but seldom guaranteed, they are risky investments. Since the term "social exchange" is in current usage, we will use it, but the investment character of the actions should be kept in mind.

2. The basic reference is Trivers' (1971) article.

3. Hirshleifer (1977) p. 501

4. Becker (1977) p. 507

5. This has been pointed out by Tullock (1977) p. 504.

6. The egoist need not "simulate" altruism in order to make these exchanges. See Blau (1964),

7. See Luce and Raiffa (1957) chapter V, for a discussion of this proposition.

8. Becker (1976) p. 822, footnote 11

9. Becker (1976) p. 822

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