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What do donations buy? A model of philanthropy based on prestige and warm glow

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Abstract

Charities publicize the donations they receive, generally according to dollar categories rather than the exact amount. Donors in turn tend to give the minimum amount necessary to get into a category. These facts suggest that donors have a taste for having their donations made public. This paper models the effects of such a taste for ''prestige'' on the behavior of donors and charities. I show how a taste for prestige means that charities can increase donations by using categories. The paper also discusses the effect of a taste for prestige on competition between charities. © 1998 Elsevier Science S.A.

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1. Introduction

Many charities publicize the donations they receive, and they often do so using categories. Cultural charities and colleges are familiar examples, typically listing the names of donors in performance programs or alumni giving reports. Donors are told that all donations between, say, $500 and $999 will make them a ''Patron'', and the charity then reports the names of these Patrons. The dollar amounts of the brackets bounding the categories are quite explicit and public, either printed

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directly above the list of names or at the front of the report. Alternative ways of recognizing donors, such as reporting the exact amount of a donation, or just reporting the fact that the donor gave something, are relatively rare.

When categories are used, most donors give exactly the minimum amount necessary to get into a category, as shown in Fig. 1, which summarizes data on alumni donations to a prestigious law school. The school changed from reporting all donations to reporting via a system of categories.[1] The figure examines the 15 most frequent donation amounts. The vertical axis shows the percentage change in

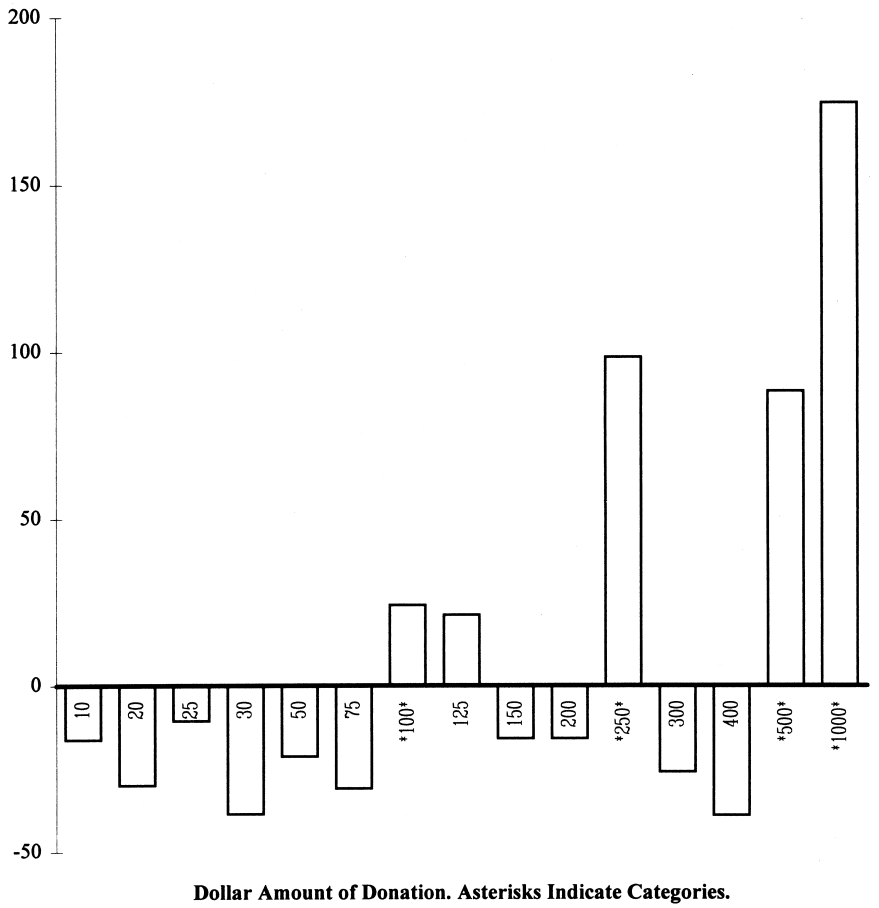

Fig. 1. Percentage changes in proportion of donors bunching, after introduction of category reporting.

[1]I have agreed to keep the school name confidential. The table compares donations the year before the introduction of categories with donations two years afterwards. The number of observations at each donation, before categories, ranges from 76 to 1403.

the proportion of donations made at those amounts after the change to category reporting. The donation amounts that were used as categories are starred. The change to category reporting increases the proportion of donations made at all the amounts that become categories, and decreases the proportion of donations made at all but one of the other amounts.[2] Other charities report that their donors behave similarly.[3]

While the economic literature has not specifically addressed the above facts, other disciplines have. For example, George Bernard Shaw argued in 1896 that

> ''...a millionaire does not really care whether his money does good or not, provided he finds his conscience eased and his social status improved by giving it away...''[4]

Anthropologists have used social status and psychologists have argued for the importance of conscience. Literature written by and for practicing fund-raisers simply assumes that both these effects exist and proceeds directly to the matter of how to use them to best advantage, with statements such as ''Attention to annual donors through recognition and reward should be a proactive part of every nonprofit organization.''[5]

In contrast, the modern economic analysis of why people give started with the assumption that they do so out of ''pure altruism'', or because they get utility from the level of the public good which donations are purchasing. Olson (1965), for example, assumes this and then demonstrates that free-riding will result in the under-provision of public goods. Andreoni (1988) showed that many of the observable facts about giving could not be explained by pure altruism. In particular, the altruistic model predicts nearly complete crowding out of voluntary contributions by government expenditures, that only the richest will contribute, and that average donations should approach zero. None of these things are commonly observed.

An alternative model, where people give because the act of giving itself brings the donor benefits, was probably given its first formal economic expression in Becker (1974). Andreoni (1989) showed that a model where giving provided such a ''warm glow'' to givers could explain facts about giving, such as wide participation across income levels, that the pure altruism model could not. Hollander (1990) developed a model where people give because doing so brings them valued social approval, assumed to be the difference between their own

[2]The reporting change also increases donations at all the other category amounts, including those which are not shown in this table because of their relative infrequency.

[3]Conversations between the author and academic and nonacademic fund-raisers.

[4]Shaw (1896), p. 120.

[5]Greenfield (1994), p. 128.

donations and average donations. Glazer and Konrad (1996) model public charity as a means of signaling income.

The model in this paper explicitly separates the motivation for giving into both the effects Shaw mentions. I use the term ''warm glow'' to refer to the first effect, a purely internal satisfaction that comes from the act of giving, and ''prestige'' to mean the utility that comes from having the amount of a donation publicly known. Prestige could be valuable to individuals because it directly enters their utility, or because being known as a donor increases income or business opportunities.[6] Giving could do this by serving as a signal of wealth or reliability. Any of these interpretations would be basically consistent with the model I develop.[7] Empirically, Kiesling (1994) discusses these two effects and develops estimates of their effects based on public listings of donations to poor relief in England in the 1860's, while YoungDay (1978) appears to be the first to suggest the possibility of isolating a social status effect, by looking at anonymous responses to mail solicitations.

The distinction between these two reasons for giving not only seems intrinsically interesting, it allows for a formal model of the interaction between the charity and the donor. While warm glow is obtained through the act of giving, and is therefore largely outside the charity's control, prestige is only acquired when the charity publicly reports the amount of the donation. Charities play a natural role in issuing these reports: if prestige is important self-reported claims about donations will naturally be suspect.[8] In turn, charities may be able to exploit the prestige effect to increase donations.[9] Modeling the response of donors to these reporting plans, and finding the donation maximizing plans given that response, will provide testable implications that do not follow from the existing models.

Most of the analysis of giving has been done on contributions toward the purchase of public goods. Since even small populations are large enough to reduce the effect of a person's donation on their consumption of the public good to a negligible level, I assume that donors ignore the effect that their donations have on the quantity of the good.[10] It is also possible that donors derive no utility from the good at all, but merely donate because they get utility from the warm glow and the

[6]If prestige is important to people because it increases wealth, it should then be modeled as endogenous. As will be seen, I use a simpler model where it is an exogenous taste.

[7]A simple normalization would handle the case where people are punished for not giving.

[8]There is some evidence that donors in fact do exaggerate the amount of their donations, by from 10 to 100 percent. These percentages are derived from a comparison of the amount people tell survey takers they gave to charities with the amount charities report they received from living donors. However, such a comparison requires many assumptions about sampling and aggregating up.

[9]There is a variety of conflicting evidence about whether or not charities are donation maximizers. I am not arguing that charities are donation maximizers in general, just when it comes to their reporting plans.

[10]See Andreoni (1989) for this result. Note that Andreoni is not quite as cynical as Shaw. Andreoni argues that even if donors do care about the level of the public good, free-riding makes this concern an implausible explanation for the pattern of donations we observe.

prestige. The model I will develop is therefore more general than other models of voluntary provision of public goods, in that it can explain why, say, a tone-deaf businessman might contribute to an opera. On the other hand it is restricted to large groups, since the free-riding result relies on the assumption of many donors. In this paper I will assume that warm glow and prestige are independent of how much others donate. Alternatively, they could be functions of an individual's relative donation.

Section 2 of this paper begins with a solution to the donor's problem, given tastes for a private good, warm glow, and prestige. Section 3 models the behavior of a single charity soliciting donations from heterogeneous donors. I show that the charity can get more donations by using a category plan than by reporting the exact amount of donations. Section 4 is a discussion of some possible extensions of this work, Section 5 concludes.

2. A model of the donor

In this section I solve the optimization problem for the donor under three different reporting plans, and develop some results that will be used later in the paper, when modeling the charity's behavior.

2.1. The donor's problem

The donor has the utility function $U = U(x, p, d)$, where x is the private good, p is prestige, and d is warm glow, assumed to be equal to the donation. Prestige is supplied by the charity as explained below. The donor faces the budget constraint $w = x + d$, setting both prices to 1. Substituting this into utility gives $U = U(w - d, p, d)$ or $U = V(p, d, w)$. Solving this for a given level of utility and w gives level curves in d, p space. These curves will shift not only with changes in utility, but also with income, because the budget constraint must be satisfied along them.

The level curves can be shown to have slope $(U_x - U_d)/U_p$, which can be thought of as a marginal rate of substitution between the goods d and p, subject to the constraint that changes in d require adjustments to x to satisfy the budget constraint. Movement along a given level curve (see Fig. 2 for an example) can be interpreted as follows. Before the inflection point, d is small and x is large, so U_d is greater than U_x. An increase in d and a decrease in x would raise utility, so p must be decreased to keep utility constant. After the inflection point, U_x is greater than U_d. Further increases in d decrease utility, and so must be balanced by increases in p, so the level curve now slopes up. Since increases in p always increase utility, level curves to the north represent higher levels of utility.

So long as d is a normal good, an increase in w will shift the curve and the inflection point out and down in p, d space. If p is fixed, then we can draw the higher income person's level curve as an outward shift. Note that, while movement

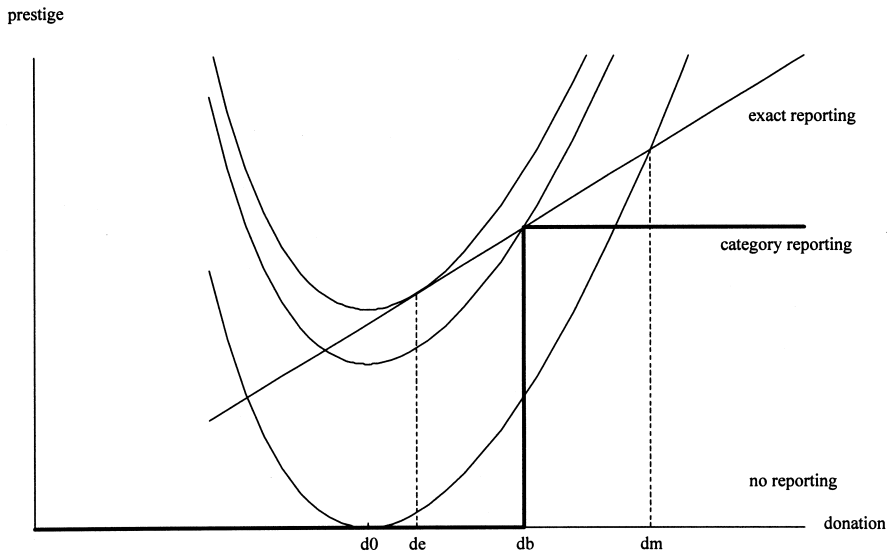

Fig. 2. Three possible reporting plans.

to the right along a given level curve means d is rising and x falling, according to the budget constraint, the shift to the right discussed here actually is associated with an increase in both d and x.

2.2. Prestige

I assume that the charity makes a report r_i about the size of the ith individual's donation, and ''society'' then awards prestige according to the function $p_i = p(r_i)$. In this section I also assume this prestige function has the form $p_i = r_i$. These assumptions are innocuous in some ways, but not in others.

The first assumption made above is that society bases prestige solely on the report made by the charity. It is also possible that society instead forms expectations about the true donation, conditional on the charity's report, the donor's claim, and other pertinent information such as the wealth of the donor, and then awards prestige based on that expectation. Harbaugh (1996) proposes a model with such expectations and an equilibrium where the expectations are correctly realized as an explanation for voting behavior. In this paper I make the assumption above, which greatly simplifies the model. It can be defended by arguing that charities seldom report the information, such as mean donations conditional on the different reporting categories, which people would need to form such expectations.

The more obvious assumption made above is about the functional form of the prestige function. This assumption can be defended by the following argument. Substituting the prestige function into utility gives $U = U(w, p(r), d)$. So long as

the prestige function is continuous, monotonic, and not too convex, any particular functional form for it can be undone in the utility function without violating the properties of utility functions. Since this model will be unable to distinguish the effect of the prestige function from that of the utility function, there is no further restriction imposed by the assumption that the prestige function is linear.

2.3. Characteristics of the reporting plans

Reporting plans translate a donation d into a report r. Society converts r to p, which enters the utility function of the donors. This chain of events could also be given as $p = p(r(d))$, or simply as $p = f(d)$, so the relationship can be shown in d, p space. The three basic plans I consider are shown in Fig. 2, which also includes level curves for a single donor with fixed wealth and preferences. In the first plan, no reports are made, and the prestige function is a horizontal line at zero. In the second, charities report the exact amount of the donation, so the prestige function is the 45° line where $p = d$. In the third plan, the charity sets a category with a minimum amount, or bracket, needed to gain classification into that category. (I will also examine situations where the charity sets more than one such category.) Those donating less than the amount of the lower bracket of the category get zero prestige, those donating the bracket amount or more get credit for the amount of the category, as shown by the step function in Fig. 2.

I look at these three reporting plans, and argue that the fact that certain kinds of charities tend to use category reporting is evidence in support of the argument that people care about prestige.[11] However, reporting plans other than these three are obviously conceivable. A charity could, for example, offer a point plan, saying ''donate $d = x$ and we will report y, donate anything else and we will report nothing.'' It could offer a menu of such points, or offer to report twice the actual amount donated, or any other nonlinear reporting plan, monotonic or not. I have not found any charities that use such plans. If, under my model of preferences, such alternative plans are optimal, then the fact that they are not used would be evidence against the model. I address this issue as follows.

First consider plans that report donations continuously and monotonically but which report other than the true donation. So long as reporting plans are public there is no reason to exaggerate. If the plans can be kept secret, donation maximizing charities should capitalize on prestige by exaggerating donations. Of course, if every charity followed this practice, it would soon become known and therefore ineffective.

Point plans and non-monotonic continuous plans cannot be ruled out by the above argument. However, they require reporting zero donations from some people and positive donations from others who actually gave less, or smaller

[11]In the conclusion I discuss the case of competing charities, where I argue that exact reporting should prevail.

reports for larger donations. While not a part of the model, the unfairness of such schemes seems a plausible reason for why they are not seen in practice.

2.4. Effects of reporting plans on donors

With no reporting, donors will maximize utility by donating where the MRS is equal to zero, or where $U_x = U_d$. I call this amount d_0. Reporting the exact donation, in combination with the assumption that $p = r$, changes the constraint on the donor from $p = 0$ to $p = d$, so the donor will set $U_x = U_d + U_p$. I call this donation d_e. Since a dollar donated now buys prestige as well as warm glow, donations can be expected to increase, unless the prestige reduces U_d or increases U_x by a lot. In the sections below I assume that $\partial U_p / \partial d$ and $\partial U_x / \partial d$ are both zero.

Under category reporting, a donor is in one of four situations. If the bracket is below d_0, the warm glow effect alone leaves them with higher utility at d_0 than at the bracket, so the charity receives only as much as it would have without any reporting. If the bracket is above d_0 but below or equal to d_e donors will maximize their utility by giving the bracket amount and receiving credit for it. The charity will receive more than under no reporting, but less than under exact reporting. (Unless the bracket is just equal to d_e.) If the bracket is above d_e but below d_m, donors give the bracket amount and the charity receives more than under exact reporting. If the bracket is above d_m, the charity again receives only d_0.

In later sections of this paper I will address the characteristics of a donation maximizing reporting plan with more than one type of donor. For now, notice that exact reporting will always yield more donations than no reporting, and that depending on the category, category reporting can do better, as good as, or worse than exact reporting. If there is only one type of donor, say the type in Fig. 2, the charity will maximize donations by setting a bracket at d_m. This is the maximum incentive compatible donation, where all rents from prestige are extracted from the donor and he is left with only the amount of utility he could have got had donations not been reported at all. Of course, the donor is still better off than he would have been without the opportunity of making any donation.[12]

Fig. 3 shows that if there are many types of donors, differentiated by say income, it can be optimal for different types to donate the bracket amount. In Fig. 3, only the optimal level curves for each type are shown, with higher income types given thicker curves. (This convention is generally followed in the remaining diagrams.) Types 2 and 3 will both donate the bracket amount. This bunching up of donations at the brackets is typical of the actual pattern of donations as shown

[12]Lansdell (1906), reports that the Buddhist monk believes ''that in receiving the alms of the faithful he thereby bestows a favour on the giver.'' (p. 584.) I have shown that, by adopting the appropriate category plan, the monk could have received a larger donation and left the giver holding none of that favor. So this model offers a natural explanation for the hostility of donors towards aggressive fund-raisers.

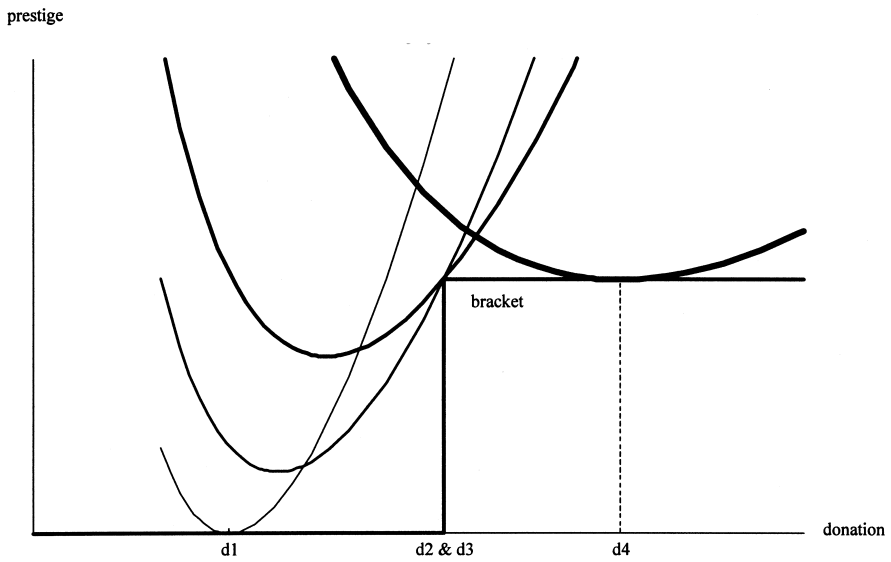

Fig. 3. Bunching up at the lower bracket.

in Fig. 1. Note that this model is also consistent with the fact that some donors (type 4, in Fig. 3) do give more than the minimum amount needed to get into a category.

3. Donation maximizing reporting plans

In this section I develop donation maximizing strategies for a single charity that knows the distribution of donor types, but not the type of any given donor. In Section 4 I will discuss multiple charities. I showed in Section 2.4 that, given a reasonable restriction on preferences, exact reporting will increase donations over no reporting. In this section I show that the charity can do better than exact reporting by adopting a reporting plan with at least two categories.

3.1. Categories beat exact reporting

I show that under rather general assumptions the charity will get more donations by using categories at the top and bottom of the distribution than it could by reporting all donations exactly. I again assume that preferences are such that d_e is greater than d_0 for each type, and that there are at least two types, differing in either income or preferences, or both. I also maintain the assumption that those

making donations within a category get prestige equal to the lower bracket of the category.

First I show, in Fig. 4a and 4b, that the charity can increase donations by setting

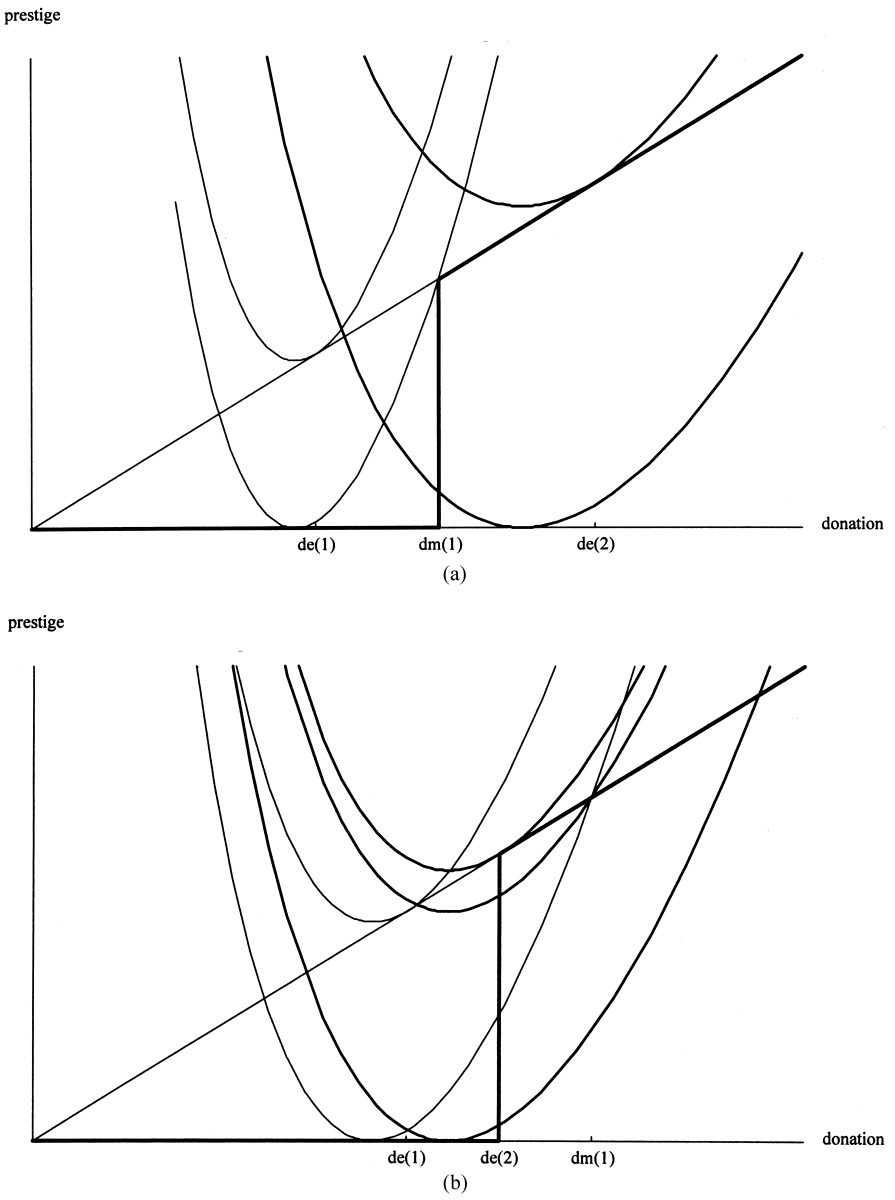

Fig. 4. (a) A low category; (b) A low category with close types and bunching.

a category at the bottom of the distribution of gifts. For comparison, suppose that the charity is initially reporting donations exactly. Each type will then donate $d_e(i)$, where i indexes the types in ascending order according to d_e, so that type 1 is the type with the lowest d_e.

Suppose that there are no types with d_e's that fall between $d_e(1)$ and $d_m(1)$. (Fig. 4a.) Setting a category for gifts bounded by brackets of zero and $d_m(1)$ induces the low type to give $d_m(1)$, rather than the $d_e(1)$ he gives under exact reporting. (By convention indifferent donors give the larger amount.) Types above 1 can still get donations of $d_e(i)$ reported exactly, so their donations will be unchanged, so total donations have increased.

For Fig. 4b, suppose that there are types for whom d_e is below $d_m(1)$. Set the low bracket at zero and the high at $d_e(2)$. Type 1 now gets higher utility by donating and receiving credit for $d_e(2)$ than from donating nothing and receiving no report. Since by the way types are indexed $d_e(2)$ is greater than $d_e(1)$, this change is an increase. Types with $d_e(i)$ at or above $d_e(2)$ will continue to have their donations reported exactly, leaving their donations unchanged, so this category again increases donations.

These results establish that a low end category will increase donations above exact reporting, but not that this is the optimal category. In Fig. 4a, for example, raising the upper bracket above $d_m(1)$ will cause the lowest type to reduce his donation to $d_0(1)$, below the exact reporting level, but it may also increase donations from higher types, depending on the particular preferences and distribution of types, and this may increase total donations.

In Fig. 5, I show that the charity can always increase donations above the exact reporting level by setting a category for the highest type that is above de for that type. Suppose the charity reports all donations up to type $n-1$ exactly. The charity can then set a category with a lower bracket of $d_e(n-1)$ and an upper bracket of $d_m(n)$. This upper bracket amount will always be more than $d_e(n)$, because $d_e(n-1)$ is below $d_e(n)$, by the definition of types. So donations from type n increase, while donations from the other types are unchanged, establishing the result. (As with the lower category, it is possible that the charity could increase donations still further, this time by lowering the upper bracket and thus inducing larger numbers of donors to increase their gifts, albeit by smaller amounts.)

3.2. Conclusions about categories

I have shown above that the charity should use category reporting at the top and bottom of the distribution of gifts. Actual reporting plans typically report all gifts using categories, not just those at the bottom and top. Simulation results for specific preferences and distributions of types, available from the author, show that such a strategy can indeed be optimal and that it will increase donations about 15% above the exact reporting level. In these simulations the optimal reporting plan involves a limited number of categories, the lower categories induce large

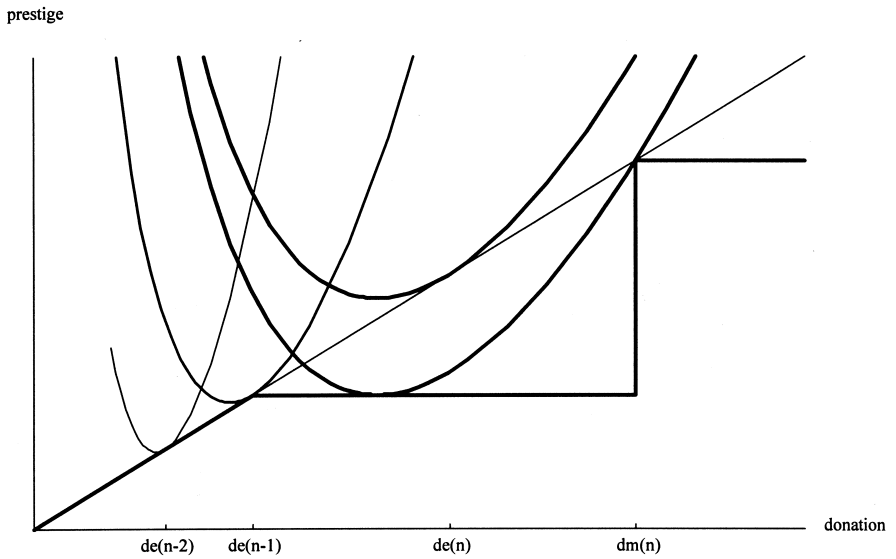

Fig. 5. A category for the highest type.

amounts of bunching, and the highest bracket is set to extract the maximum donation from a single donor. Actual category plans do have these characteristics, lending support to the model of preferences used in this paper.

Another characteristic of charitable solicitations that fits with this model is the often seen ''If you cannot afford to give $20, please give whatever you can afford.'' This is directed at those for whom the bracket and associated recognition exceeds their willingness to pay. In Fig. 3, for example, their level curve from no report would lie always to the left of the bracket. This appeal can be seen as a reminder to these people that they will get more utility from donating d_0 than from donating nothing.

4. Discussion

When it comes to fundraising, charities seem to fall into three categories. First, there are educational and local cultural organizations. These charities usually solicit large donations, and the donations are publicized to the limited number of other people with ties to the charity. The charities devote considerable space in their publications to reporting who gave what.[13] These charities almost always use

[13]The Pittsburgh Opera's program for the 1994 performances of ''La Traviata'', for example, has 39 pages of non-advertising content. 17 of these pages are devoted to reporting contributions. Most colleges publish annual giving reports which are almost entirely devoted to lists of who gave what.

categories, and the categories are quite far apart: often 200 percent or more. Second are national charities, which typically solicit small donations from large numbers of people who have no other connections to each other. They almost always list recommended donations, but often these are very close together, perhaps as close as $5 or 20%. They often do not give different labels to these categories or otherwise distinguish donors. When they do, it is often on the basis of the kind of premium that a donor will receive. They typically do not report donations. Their mailings are primarily devoted to descriptions of the problems the charity is concerned with, and how a donation will help alleviate these problems. Third are United Way type charities, which organize a single fund drive and distribute the proceeds to multiple charities. I now provide a brief explanation for why I believe these three types of charities use the techniques they do.

Two important differences between charities arise because of the nature of the prestige effect: there is complementarity in the provision of prestige between the amount of the donation and the ability of others to reward the giver. This means that donations made to charities that can provide publicity to friends, classmates, neighbors, customers, and clients will, all else equal, buy more prestige than those that cannot.[14] This effect can give a charity monopoly power. For example, donations by a lawyer to his alma mater presumably buy prestige (and referrals) from fellow alumni that donations to no other charity could earn.

Since the categories clearly reduce the welfare of the donors below what they could get with exact reporting, I would expect that one form which competition by charities for donations would take would be reductions in the spread between categories. This competition should be more extreme among charities which are good substitutes for each other. In fact this seems to be the case, and I argue that this is an explanation for the differences between the first two types of charities noted above. Colleges are the most obvious examples of charities with few good substitutes, and their categories are far apart. Charities such as environmental and social welfare groups, of which there are many and to which donors have comparably less permanent ties, ask for small donations and make little effort to distinguish between donors. (Although another explanation for this difference in behavior could simply be the relative unimportance of prestige for the second type of charities.)

The third kind of charities are the United Way type charities. One obvious explanation for the existence of groups such as the United Way is that they reduce solicitation costs through economies of scale. This model suggests another reason: such a group can serve as a cartel, charging high prices (large donations) in return for recognition. In fact, the United Way has acted as such a cartel would be expected to do, by imposing limitations on the fundraising practices of member

[14]This process doesn't require that the people involved actually know each other. Bill Cosby's record breaking gift of $22 million to Spelman College was widely reported, and presumably he received valuable goodwill from many fans whom he did not know.

charities. This behavior is difficult to reconcile with the economies of scale explanation. The United Way structure also seems ideally suited to take advantage of the prestige effect. First, by working locally, United Way groups insure that they are able to distribute reports on giving to those with the highest ability to provide prestige. Then, by forming a cartel, the United Way can increase donations by the use of categories. Of course, if the money collected is being used to provide otherwise inefficiently under-provided public goods, this kind of cartel may well be socially desirable.

Colleges do not have an incentive to form a United Way type cartel for alumni donations, because each college already has a monopoly on prestige for its alumni. The model does suggest that colleges should attempt to form cartels when looking for contributions outside their alumni, because those potential donors will have many alternative colleges to give to, and so should be able to obtain a given level of publicity and prestige with smaller donations. The United Negro College Fund, which collects donations from the general public and then distributes them to a group of colleges, may be an example of such a cartel. But monopoly power should not always be enough to cause nationally based general welfare charities to form cartels. Because some of these groups cannot provide much prestige to their donors, there is little that they can gain by attempting to use prestige to increase donations.

This model suggests an obvious explanation for the rewards that charities often give donors. The prototypical such reward is a coffee cup emblazoned with the charity's name. What better way to inform your colleagues of your contribution toward the public good than to walk around the office holding a cup that everyone knows ''is not available in any store.'' University buildings named after a donor are a similar, if more expensive, device. Such rewards can be explained as efforts to increase giving by increasing the public part of the benefits. They can be expected to be particularly important to charities that cannot otherwise take advantage of the prestige effect.

Matching contributions are another interesting issue. Many firms match the donations of their employees. Such policies seem difficult to explain without assuming prestige is important. If the prestige from a donation spills over to the firm, or to the other employees of the firm, matching donations are an obvious means of internalizing the externality. If this spillover effect is the reason for matching, then it seems clear that the charity should report the donation as coming from the corporation. But doing so reduces the individual's incentive to give. In practice, college giving reports typically list the corporations that made the matches separately from the alumni donors, and provide no indication as to which individual gift was, in part, a gift from a corporation. This maintains the incentives of alumni to give and employers to match, though perhaps at the expense of some dilution in the prestige awarded to all donors.

Last, it is possible to exploit the category reporting of donations to estimate the importance of the tastes for prestige and for warm glow as motivations for giving.

With category reporting, that portion of a donation that is above the lower bracket is not reported by the charity, and so provides no additional prestige, only additional warm glow. When the proportion of such donations is relatively small, the taste for prestige is relatively large. When donations in total are large, the preferences for prestige and warm glow in sum are large. In combination, these facts identify both tastes. Once these tastes have been measured, it will be possible to calculate optimal reporting plans and then compare these to actual practice.

5. Conclusion

This paper began with the assumption that charitable donations buy two things for the givers: private warm glow and public prestige. From this assumption I developed a model with two main implications for the behavior of donors and charities. First, if charities report using category plans, donations will bunch up at the lower brackets. Second, if donors are motivated by prestige, charities can increase donations by using category reporting plans. Both these things are commonly observed characteristics of the behavior of donors and charities.

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