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The Economics of Giving for Overseas Development

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Abstract

Giving by individuals for development has been illustrated recently by some spectacular examples. A few people giving very large sums, and a very large number of people giving modest amounts, are both important phenomena in the field of development finance. This paper considers how in theory such behaviour might be explained using the tools of economic analysis. The paper is about the economics of giving, but focused on why people give to a particular cause – world development. There has been an extensive literature on the total volume of giving, but much less on the allocation by cause. Giving for development does not seem to be adequately explained by either the "warm-glow" or the "public good" models. The paper suggests a new "identification" approach to individual giving, which combines the results focus of the public goods formulation with the scale of the warm glow model. The analysis initially treats giving for development in isolation, but goes on to examine how development causes fit into the pattern of overall charitable giving by individuals and the pattern of giving over the individual lifetime.

The Economics of Giving for Overseas Development[1]

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1. Introduction

Giving by individuals for development has been illustrated recently by some spectacular examples. The gifts by Ted Turner, Bill Gates, and Warren Buffett have made available for global development sums that are truly remarkable. Equally remarkable in scale is the number of people who responded in 2004/5 to the Tsunami Appeal (NCVO and CAF, 2006). A few giving very large sums, and a very large number giving modest amounts, are both important phenomena in the field of development finance. In the UK, 1 person in 10 reports giving for development (Micklewright and Schnepf, 2007) and Oxfam's voluntary income in 2004/5 was £177 million (*Charity Trends,* 2006). The aim of this paper is to consider how – in theory – such behaviour might be explained using the tools of economic analysis.[2] The paper is about the economics of giving, but focused on why people give to a particular cause – world development. There has been an extensive literature on the total volume of giving, but much less on the allocation by cause. This criticism applies both to empirical research on giving, with some notable exceptions,[3] and to the theoretical literature (see the recent extensive survey by Andreoni, 2006). Different causes attract support for different reasons. In this paper, I consider how far giving to Oxfam is different from support for a local hospice.

The literature on the economics of charitable giving, which dates back to Becker (1961), Boulding (1962) and Vickrey (1962), contains valuable insights, such as the difference between concerns for the "public good" and the personal benefit that

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[2] The paper concentrates on economic models, but a full explanation clearly needs to draw on other literature, such as that in sociology: see, for example, Halfpenny (1999).

[3] See Walker and Pharoah (2002, section 6), Backus (2006), and Havens, O'Herlihy and Schervish (2006).See also the literature on support for environmental causes (for example, Foster et al, 2001).

people derive from the act of giving ("warm-glow"). This distinction provides a point of departure in section 2 of the present paper, but I argue that, taken on their own, neither the public good nor the warm glow models are fully satisfactory as a basis for analysing giving to development. In section 3, I suggest a new "identification" approach to individual giving, which combines the results focus of the public goods formulation with the scale of the warm glow model. The analysis in sections 2 and 3 treats giving for development in isolation; in section 4, I examine explicitly the choice between different causes. How does development fit into the pattern of overall charitable giving by individuals? Here, a central feature of development is that it is a temporal process; it is hoped that assistance today will lead to a sustained improvement in living standards. This raises the question of the pattern of giving over the individual lifetime. Section 5 summarises the conclusions about the key questions: the total given to charity and its allocation among causes.

The paper deals with giving by individuals, and its relation to government policy and the policies of charitable organisations. There is an additional important sector – giving by institutions, such as companies, trade unions and foundations – but this is not covered. Nor does the paper consider giving by individuals in the form of volunteering, whether by acting as a fund-raiser, working in charity shops or by serving overseas. A further consideration not treated here is the "other side of the market": the fund-raising activities of charities (see Weisbrod and Dominguez, 1986 and Andreoni, 1998). As is noted by Micklewright and Wright, the economic literature on charitable giving has not focused much on the demand side of the market: "it has been the behaviour of donors rather than the actions of different charities that has been the subject of attention" (2005, page 139). Finally, purchases of "fair trade" goods are not treated explicitly, although the implicit transfer may be seen as forming part of the giving variable.

2. Standard models applied to giving for development

When a person is deciding whether to have wine with the evening meal, then it is reasonable to assume that the alternative is beer, or fruit juice, or mineral water, and that this is the trade-off being considered. It is not, in general, a choice between a glass of wine and a paperback. In the case of giving for development, the alternative is less clear. Is the choice between giving for development and an evening out? Or is the choice between giving for development and giving for medical research? In this and the next section, I consider the first of these choices, concentrating on donation to a single charity at the expense of private consumption; in section 4, I treat the choice between different charitable objectives.

The standard economist's model of charitable giving (see Andreoni, 2006) assumes that individuals maximise utility, where utility derives from charitable donations, denoted by d, and from private consumption, equal to y-d, where y denotes total income. The utility from donations has been assumed to take one of two main forms. The first is that derived directly from the act of giving, which has come to be known as the "warm-glow" (Andreoni, 1990); the second is derived from the achieved results of the gift, referred to as the "public good". In the first case, a person derives utility from giving to the Tsunami Appeal; in the second case, the person

derives utility from the fact that the Tsunami victims are being helped. As has been demonstrated in the literature, these two motives for giving can have quite different implications. This is evident even without any formal analysis, as may be seen from asking how far official giving "crowds out" private giving? If, as in the 2005 UK Africa Commission, the government give a high profile to development aid, does this make individual citizens more or less likely to be willing to contribute? The extent of government aid to the victims does not affect the warm glow that the person derives from his or her contribution, so that, on this basis, there is no crowding out. But, with the public good motive, government aid reduces the urgency of the public good case for giving, and hence tends to reduce the contributions by individuals. The distinction is therefore important.

My aim here is to take these two standard models as a point of departure and investigate how far they apply in the specific case of giving for development.

2.1 The Warm-Glow Motive

First, let us consider a purely warm-glow approach. In order to provide some mathematical shape to the model, let us assume that the utility function is additive and logarithmic: i.e. the utility derived from private consumption and from the contribution of gifts to development is

$$U \equiv (1 - \alpha) \log\{y - d\} + \alpha \log\{1 + d/d_0\} \qquad (1)$$

where α ($0 \leq \alpha < 1$) and d_0 (≥ 0) are constants whose role will be explained. The second term is zero if the person does not make any gift. The level of gifts that maximises U is given by

$$d = \alpha y - (1 - \alpha) d_0 \text{ where this is positive;}$$
$$\text{otherwise zero when y is less than } (1 - \alpha) d_0/\alpha \qquad (2)$$

The coefficient α shows the (constant) marginal propensity to give out of an extra £ of income. If you tithe a tenth of your extra income, then $\alpha = 0.1$. But the person is only assumed to do this if their income is sufficiently large. This is the role of d_0, which governs the income level at which the person begins to give. The critical value of income is $y^* \equiv (1-\alpha) d_0 /\alpha$. Giving as a function of income – the Engel curve for giving - is plotted in Figure 1. It may be noted that, with the assumptions made, giving changes continuously with income: for income just above y^* the level of giving is close to zero. If a person were to say "I am now rich enough to become a donor and I will give a tenth of my income", then such a jump in behaviour cannot be explained by the model.

The theoretical framework set out above can be used to derive various policy implications. For example, we can see that the effect of charitable fund-raising activity may be represented by a shift upwards in the coefficient α, which increases the proportion of people giving and increases the marginal propensity to give – see Figure 1. This has implications for any statistical analysis of the impact of fund-raising activity. If we are estimating the level of giving as a piece-wise linear function

of income, then we need to introduce the fund-raising variable in two ways: as shifting the intercept and as shifting the coefficient of income.

One important concern missing from the warm-glow model is with the effectiveness of the charitable donation. In debates about aid for development a key role is played by issues of "effectiveness". A reason frequently advanced for *not* giving is that the money is wasted: it disappears in administrative costs or is diverted to people other than the intended recipients. People may share the goal of wishing to aid poor countries but lack confidence in the means. Qualitative research (Atkinson and Eastwood, 2007) has shown the role played by negative stories about misgovernment and corruption in dissuading people from giving for development. It does indeed seem reasonable to assume that, in the case of development, a primary preoccupation of donors is with the usefulness of their contribution. Giving to a "good cause" means not just that the end purpose is desirable but that the charitable agency is effective. This brings us to the "public good" model.

2.2 Public Good Motives

If giving behaviour depends on the achieved results, then a wider set of factors have to be taken into account. In addition to the leakages just discussed, the impact on the public good depends on the contributions of other donors and of the government. Suppose to begin with we consider the impact on the current circumstances of recipients; famine relief as opposed to long-term development (discussed in section 4). The utility function for an individual, one of *n* potential donors, may then be written

$$U \equiv (1-\alpha)\log\{y-d\} + \alpha\log\{(1-\ell)[d+\delta(n-1)+gn]/r\} \qquad (3)$$

The warm glow element has now been replaced by a more complex expression. The square bracket contains the individual gift, *d*, plus the total given by others. The total is made up of the giving by the other *(n-1)* donors averaging δ per person and of *gn* contributed by the government. This is divided among the number of recipients, denoted by *r*. But a certain proportion ℓ of this total is lost in leakage.

Suppose that the person takes as fixed the amounts given by others and by the government. The utility maximising choice of *d* by the individual becomes

$$d = \alpha y - (1-\alpha)\{\delta(n-1)+gn\} \text{ where this is positive;}$$
$$\text{otherwise zero when } y \text{ is less than } (1-\alpha)/\alpha\{\delta(n-1)+gn\} \qquad (4)$$

The giving function (4) is of the same mathematical form as before, with the intercept being replaced by a term that depends on the giving of others. From this, we can immediately see the extent of crowding out. Suppose that there is an increase of £1 in total government support (*gn*). From (4), we can see that the individual is predicted to reduce giving by all but a proportion α of this increase (or to reduce giving to zero). So, with $\alpha = 1/10$, there is 90 per cent crowding out. Put another way, the overall total of aid is

$$d+\delta(n-1)+gn = \alpha[y+\delta(n-1)+gn] \qquad (5)$$

The person treats the increase in gn as an increase in total resources and "spends" a fraction α on development assistance. (No allowance is made here for any taxes necessary to finance the increase in g; if taxes are increased, this will have an offsetting effect in reducing y, and the degree of crowding out will be larger.)

The extent of leakage (ℓ) does not appear directly in the expression (4). (Nor do the number of recipients (r) – see below.) As may be seen from (3), the second term may be split into $\alpha \log\{(1-\ell)/r\}$ and $\alpha \log\{d + \delta(n-1) + gn\}$, so that neither r nor ℓ affect the choice of d. As far as ℓ is concerned, this may appear surprising. One might expect that the willingness to give would depend on the extent of leakage. There are however two countervailing effects, just as with any consumer good. A rise in price causes us to buy a smaller quantity, but total spending only falls if the quantity reduction is proportionately larger than the price increase. The effect on total spending depends on the elasticity of demand. In the present case, the "price" of a transfer has increased: if there is 50 per cent leakage, then it costs £2 to transfer £1. The net amount transferred, $d(1-\ell)$, falls, but – with the assumed functional form – by the same percentage as the price increase, so total spending, d, remains unchanged. As formulated, therefore, the model does not capture the observation that increased leakages make people less willing to support development charities. We need either a different functional form or an alternative formulation.

2.3 Public goods and large numbers

The formulation does allow us to examine the key role of large numbers, which has led to criticism of the public goods approach by Sugden (1982) and others. Large numbers of potential recipients are a very evident feature of development. Everyone knows that the number of people living below the World Bank poverty line is measured in billions. A cheque for £1,000 will make a material difference to the financing of a local hospice; it would not, on its own, make a material difference to the solution of world poverty. At the same time, we have seen that the number of recipients does not enter the giving equation (4). This again suggests that the formulation has major consequences.

It is however not just the number of recipients that is large, but also the number of potential donors, n. To discuss this, we need to take into account the responses of other donors. The term δ is the result of the decisions of others about their values of d. The outcome depends on what an individual believes about the behaviour of others. The standard assumption in the economics literature is that made above: i.e. people determine their giving assuming that the behaviour of others is independent of their own decision (a "Nash" assumption). Suppose that this holds, as may indeed be plausible where n is large. If everyone is identical, then $\delta = d$, and we can solve for the value of d

$$d = \alpha / [n(1-\alpha)+\alpha] - (1-\alpha)g / [(1-\alpha)+\alpha/n] \qquad (6)$$

From this, we can see that the model implies that, as n rises, everyone reduces their donations. Moreover, the threshold income level rises, so that more and more people give zero. The larger the number of potential donors, the more willing people are to

"free ride" on the contributions of others.[4] Indeed, as *n* tends to infinity, individual giving goes to zero.[5] This is why Andreoni summarised the literature as saying that, as the number of people rises "warm-glow will become the dominant if not the exclusive motive for giving" (2006, page 1223). Given the large number of potential donors to fund world development, the public good model does not seem adequate. As Sugden argued many years ago, "the public good theory of philanthropy is untenable as an explanation of the behaviour of those people who contribute to large charities" (1982, page 348).

Taken on their own, neither the public good nor the warm glow models seem therefore satisfactory as a basis for analysing giving for development. They do not allow adequately for concerns about leakages, nor do they allow us to treat in a suitable way large numbers of potential donors and recipients. In the next section I suggest an alternative that blends the two approaches.

3. The "identification model

A combination of the warm-glow and public goods formulations seems more relevant to the case of giving for development. Melding the scale of the warm-glow approach with the results focus of the public goods formulation yields an explanation of giving in the case of large populations that seems to capture the way in which giving is presented by charitable agencies. In what I shall call "the identification approach", the donor is assumed to be concerned with the impact on the living standards of the recipients; it is not enough simply to put the cheque in the envelope. But the donor does not regard the cheque as being divided among millions of potential recipients. The donor is assumed to visualise a recipient or a family or a village. Such a visualisation is indeed much promoted by development charities, and is made concrete in programmes where donors "adopt" families, to whom the transfer is channelled. Even where there is no explicit adoption, donors often are encouraged by development charities to "identify" with the situation of recipients on a one-to-one or one-to-m basis, where m is a small number. For example, they see their gift as allowing an aid programme to be "extended to another village".

The identification approach may be formalised by writing the utility function as

$$U \equiv (1-\alpha)\log\{y - d\} + \alpha\, m \log\{\pi + (1 - \ell)d/m + d_0]\} \qquad (7)$$

The potential donor attaches a weight α to the welfare of each of the m recipients, where this depends on their own resources, denoted by π and the amount given after leakage and divided by the number of recipients. There is, as in the original equation (1) a parameter d_0 that reflects individual preferences. The resulting level of giving is

[4] As discussed by Jones and Posnett (1993, page 135), free-riding may be less with alternatives to the Nash assumption. If contributors expect that increases in their own giving will stimulate others to give more, then the degree of free-riding is reduced.

[5] Andreoni (1988) shows that, with individuals differing in income, as *n* increases, there are positive total donations but the proportion of the population who give, and the average gift, tend to zero.

$$d = \{\alpha y - (1-\alpha)(\pi + d_0)/(1-\ell)\} / [(1-\alpha)/m + \alpha]$$
where this is positive;
otherwise zero (when y is less than $(1-\alpha)(\pi + d_0)/(\alpha(1-\ell))$) (8)

Since giving does not go to zero as the number of potential donors becomes large (*n* does not enter (7)), the identification model may appear closer to that of warm-glow. In some respects, the giving relation is similar. There is an intercept and constant marginal propensity to give. But there are significant differences. First, the extent of leakage affects the amount given. A rise in ℓ raises the threshold for giving and reduces the level of giving. If the leakage is sufficiently large, no one will give. Second, the amount given depends on the perceived situation of the recipients, via the term π. Here there may be an impact of the media and NGOs. If the activities of bodies such as the Commission for Africa or of development charities make potential donors more aware of the low levels of living, then this will increase both the proportion of donors and the amount given. Thirdly, the number of recipients per donor, *m,* affects the amount given but not the threshold. If donors extend their range of concern, increasing *m*, then this increases the level of giving. Suppose $\alpha = 0.1$. Then, with $m = 1$, the term in square brackets in (8) is equal to 1; with $m = 3$, it is equal to 0.4, so that the amount given is 2½ times higher.

Does this mean that there is no crowding out? Formulation (7) does not include a term in *g* or in the gifts of others. These variables do, however, enter indirectly via the term π, the living standard of the recipient in the absence of giving. There is crowding out to the extent that donors perceive that increases on government aid or in the gifts of others imply that the recipients are better off. This is a reason for entering the level of official development aid (ODA) as an explanatory variable in a time series analysis or in a cross-country cross-section study. The effect depends, however, on the perceived effectiveness of ODA. Suppose that the perceived relative effectiveness is θ, so that, taking for simplicity the case where $m = 1$, an increase in ODA increases π by $\theta(1-\ell)$, then the degree of crowding out is $(1-\alpha)\theta$. So if a person believes that government aid is only half as efficient as private donations, then (with $\alpha = 0.1$) crowding out is reduced to 45 per cent. This means that, in the case of a time series analysis, we can introduce a separate crowding out variable; the coefficient divided by $(1-\alpha)$ provides an estimate of θ. In the limit, if people believe that governments are totally ineffective, then there is no crowding out. Moreover, as θ gets smaller, the intercept of the giving function moves to the left. In other words, if a person says "government aid is wasteful, compared with Save the Children", then they should be willing to give more themselves than if they believed government aid to be effective.

The "identification" model just described combines the scale of the warm-glow approach with the results focus of the public goods formulation to yield an explanation of giving where there are large numbers of potential recipients and large numbers of potential donors. It generates a giving function and a giving threshold depending on observed variables such as income and the level of ODA, and on perceived variables, such as the extent of leakages and the effectiveness of aid, for which we can construct proxies. Moreover, the underlying motivation seems close to the way in which giving is envisioned by charitable agencies.

4. Development giving versus other causes and over time

So far giving for development has been considered in isolation. I now analyse the allocation of a given total of giving among different causes, of which development is one. One way of viewing this procedure is in terms of a process of "two-stage budgeting": a person first decides how much in total to give to charity and then allocates this total. In certain circumstances, it makes intuitive sense. People decide to go out for dinner and then choose between steak and fish when they see the menu. In the same way, we can suppose that the person has decided to give a sum *a*, and is considering how to allocate this sum between development and medical research. Such a process is consistent with utility maximisation under certain separability conditions (Deaton and Muellbauer, 1980, Chapter 5), which are satisfied by the additive forms used here.

The restaurant analogy may however be misleading for two reasons. The first is that the separability conditions may not hold, so that we cannot decompose the decisions in this way. This is a serious possibility and serves to warn about the adoption of specific functional forms that may (implicitly) restrict our modelling of the decision. People may, for example, make life-style choices that have implications for all categories of expenditure. For instance, a person may respond to a rise in the price of oil by reducing their spending on travelling and by switching their charitable donations towards development charities working in oil-poor countries.

The second respect in which the restaurant analogy is misleading is that, whereas people choose either steak or fish main courses, the donor may well divide the sum between the charities. This has been highlighted by the Undercover Economist (Tim Harford): "Someone with £50 to give away and a world full of worthy causes should choose the worthiest and write the cheque. We don't. Instead, we give £2 to the street collector for Save the Children, pledge £15 to Comic Relief, another £15 to Aids research, and so on" (*FT Magazine*, 7/8 October 2006). This assertion is borne out by evidence about the degree of concentration of giving behaviour in the UK provided by the CAF and NCVO Module in the Omnibus survey. Micklewright and Schnepf (2007) find in fact that, for all causes, the probability of a donor to one specific cause giving to another is higher than the unconditional probability of giving to the other cause.

4.1 Allocating between charities

Suppose that we represent the utility from development giving by the "identification" motive represented by the second term of equation (7), and add a term for the utility from giving an amount *b* to medical care research, so that the "sub" utility function is

$$u \equiv \alpha\, m \log\{(1-\ell_d)d/m + \pi + d_0]\} + \beta \log [(1-\ell_b)b+b_0] \qquad (9)$$

where $d + b = a$, b_0 and d_0 are constants, and I have allowed for different degrees of leakage. The choice is illustrated in Figure 2. The curve *AB* shows the marginal benefit from giving to development, starting at *A* and falling to *B* as *d* reaches the

whole of the charity budget. The curve *CD* is the same for medical research, but in the reverse direction, since giving to the medical charity rises as we move to the left. The person chooses the point *P*, where the marginal value is equated. The level of giving for development is given by

$$d = \{\alpha\, a + \alpha b_0/(1-\ell_b) - \beta(\pi + d_0)/(1-\ell_d)\} \,/\, [\beta/m + \alpha] \qquad (10)$$

The amount given for development rises with the total given, *a*; the fraction of an extra £1 being divided in proportions that depend on $\alpha m/\beta$.

In the case shown in Figure 2, the person chooses, quite rationally, to spread his or her donations. Having decided to give, they give to both causes. They do not plump for just one cause because there is declining perceived benefit from an additional £1. The relative amounts given to the two causes depend on the person's relative concerns, on the perceived need, and on the relative effectiveness with which the two charities use the funds. The last of these has been described in terms of leakage, but we have also to consider the spending power of £1 in different uses. Here giving for development may have an edge: building a medical centre in Uganda costs less (at the exchange rate) than one in Umbria. As is noted by Micklewright and Wright, "development charities are quick to emphasize the very low cost in Western terms of many of their interventions" (2005, page 139).

On the other hand, it is quite possible that the person will give to only one charity. Indeed, in their analysis of charitable fund-raising efforts, Andreoni and Payne assume that individuals give only to "the charity nearest their ideal" (2003, page 794). If the values of the parameters are such that, in Figure 2, the point *D* lies above *A*, then the person gives only to the medical charity. We are at a "corner" with $b = a$ and $d = 0$. For small levels of giving (i.e. *a* effectively zero), this corner solution happens where

$$(\beta/\alpha)\,.[(\pi+d_0)/b_0]\;\;[(1-\ell_b)/(1-\ell_d)] \;> 1 \qquad (11)$$

In other words, where greater weight is attached in the utility function to the medical charity ($\beta > \alpha$), where the situation is worse in the absence of help, and where it is more effective in using the resources (the loss rate ℓ is less). Not all of these are necessary. The medical charity may have a lower weight but a higher score on effectiveness. But we can also see that a corner solution becomes less likely as total giving rises, since the marginal value of spending $b = a$ falls. So that, where condition (11) holds, there will be a critical value of *a,* denoted by *a*,* such that people with total giving below *a** give only to the medical charity, whereas people with total giving above *a** give to both causes.

Does this two-stage budgeting mean that individual charities are playing a zero-sum game? With fixed total giving, this may appear to be the case. Suppose that development charities become more effective, reducing ℓ_d. From (10), the level of *d* increases, and, with *a* fixed, giving to medical charities falls. But this overlooks the inter-relation with the first-stage. Even with additive separability, an improvement in the effectiveness of one charity makes charitable giving as a whole more attractive, and tends to increase the total given. If Oxfam becomes much more effective in using its resources, part of the extra giving for development is drawn from spending on non-

charitable purposes. For charities as a whole it is a positive-sum game, even if market shares do depend on their relative competitiveness.

4.2 The time dimension

The model of decision-making adopted so far has been timeless. This has meant that we have not been able to consider the *timing* of giving in relation to the individual life-cycle. Yet this is an interesting dimension. For example, the 2005/06 survey of individual charitable giving in the UK shows a shift towards younger groups giving more than in the previous year (NCVO and CAF, 2006, page 13). What determines the time path of giving over the life course? This seems particularly relevant to giving for development, where time is of the essence. If we believe that investment in development has a high rate of return, then it is more valuable that a person gives today than if they let the sum accumulate in their bank account before making a later gift.

A full treatment of the life-cycle of giving is undoubtedly complicated, but we can learn something from a highly simplified case. What we want to know is why a person should delay making the gift, particularly when investment in development generates a much higher return (ρ) than donors earns on their savings (taken for simplicity to be zero). One obvious reason that the gift is irreversible and that the donor may fear that he or she will later need the money. King Lear has left a strong impression. This "precautionary" motive for delaying gifts is similar to the precautionary motive for saving.

To formalise this, suppose that at any date a person gets utility $u(c)$ from personal consumption plus $v(d)$ from gifts, where both $u(c)$ and $v(d)$ are functions such that the marginal gain is positive but decreasing. The marginal gain from consumption is infinite at zero consumption but the marginal gain from gifts is finite at zero gifts (allowing the choice of zero gifts). For simplicity, I consider only two periods, when the person is working (denoted period 1) and when they are retired (denoted period 2). The person starts with a wage w, which they can consume, c_1 in the first period, or give an amount d_1, or save for the next period. What happens next period is uncertain. There is a probability p that the person will suffer a loss, z, in which case all savings are used for consumption (equal to $w-c_1-d_1-z$) and there are no gifts. With probability $(1-p)$, the person will be fine, and savings are divided between consumption and gifts next period, d_2. For simplicity, the real interest rate is assumed zero, so that consumption next year in this case is equals $w-c_1-d_1-d_2$. The person has therefore to choose c_1, d_1 and d_2, and is assumed to do so in such a way as to maximise expected utility:

$$u(c_1) + v(d_1) + pu(w-c_1-d_1-z) + (1-p)u(w-c_1-d_1-d_2) + v(d_2) \qquad (12)$$

In the second period, if the person suffers a loss, by assumption no gifts are made, so that (where $'$ denotes the first derivative)

$$u'(w-c_1-d_1-z) > v'(0) \qquad (13a)$$

Where the person does not suffer a loss, the conditions for the second period choice are

$$u'(w-c_1-d_1-d_2) = v'(d_2) \text{ or } u'(w-c_1-d_1) > v'(0) \text{ and } d_2 = 0 \qquad (13b)$$

The first period choice is made taking account of the future choices (conditional on the outcome), and requires that

$$u'(c_1) = pu'(w-c_1-d_1-z) + (1-p)u'(w-c_1-d_1-d_2) \qquad (13c)$$

and

$$u'(c_1) = v'(d_1) \text{ or } u'(c_1) > v'(0) \text{ and } d_1 = 0 \qquad (13d)$$

We can deduce that if d_2 is zero, then the person makes no gifts at all (the right hand side of (13c) is then greater than $v'(0)$). So that the pattern of giving is either to give in both periods or to give only in the second period. Put differently, if the person were obliged to give in both periods, then the amount given would be smaller or zero. Given the risk that they will suffer a loss, potential donors do not "frontload" their giving.

Suppose however that we modify the assumptions so that there is a higher return to giving in the first period: $v'(0)$ is larger for d_1 than for d_2. In that case, provided that the return is sufficiently high, a person may be converted into a first-period donor, and indeed may give only in the first period. It should be noted that this is concerned not with effectiveness *per se* but with the *relative* effectiveness in different periods. Development charities may be able to bring forward giving by stressing that time is of the essence.

4.3 Disaster relief versus development aid

Within aid to poor countries, a distinction is often drawn between disaster relief and aid for sustained development. While development charities have been concerned with both immediate relief and with longer-term development, they have long tried to shift the balance to the latter. Nightingale has described how the Freedom from Hunger Campaign, launched in 1960, encouraged charities "to turn decisively from famine relief to what has become known as 'aid in depth'" (1973, page 221). What is likely to determine the balance between these?

Although in some cases disaster relief and development aid are hard to separate, in principle they have a different timescale. In the former case, immediate help is required, and there may be a reasonable expectation that relief needs only to be temporary. The contribution being made relates to the loss rather than to the general standard of living. People give to earthquake or flood victims in medium-income countries. Indeed, "identification" in this case may be closer to "insurance". The implicit contract is that, in the event of oneself becoming a disaster victim, help will be forthcoming. Yachtsmen's support of the Royal National Lifeboat Institution has certainly that character. If that is the case, then one might expect the degree of support to rise with the perceived prevalence of unavoidable disasters, as with current

concerns about climate change. Denoting the prevalence of disasters by *Q*, this leads to the first term in a utility function that combines both motives:

$$u \equiv Q\,\alpha \log\{(1-\ell_r)d_r + \alpha_0]\} + \beta \log [(1-\ell_d)d_d\,(1+\rho)+\beta_0] \qquad (18)$$

The second term reflects the development motive, where ρ is the rate of return. The argument that investment provides continuing help has long been used by charities: "after the 1960 Agadir earthquake … the community's customary diet of fish was left to rot in the sun, and people starved: War on Want provided a refrigerated fish hall" (Nightingale, 1973, page 221). But the longer-term nature of the investment may also mean that the results are less transparent, and offsetting the factor (1+ρ) may be a higher perceived leakage.

5. Conclusions

Neither of the standard models used by economists appears wholly satisfactory as a basis for explaining giving for development. We need to combine the scale of the warm-glow approach with the results focus of the public goods formulation to yield an explanation of giving in the case of large populations. In section 3 I have suggested a new "identification" model that provides one way in which this can be done.

An important element missing from many of the theoretical models is the perceived effectiveness of charitable giving for development. This affects the total level of giving, the allocation between development and other causes, and the allocation between disaster relief and development aid.

Governments may affect individual giving through crowding out, but this should not be exaggerated; while the public goods formulation suggests that crowding out is very substantial, this is not necessarily the case with the identification model, and even in the public good case the effect is mitigated where the perceived effectiveness of official aid is low. If the government demonstrates greater efficiency in the application of ODA this may reduce individual giving, but if government makes people more aware of the scale of the problem, this has the reverse effect.

The existing literature, both theoretical and empirical, has paid relatively little attention to the allocation of charitable funding by cause. This paper has focused on one specific cause – giving for development – and within this we need to distinguish between disaster relief and aid for sustained development. People may give to the cause that provides the "biggest bang for the buck", but the size of the bang depends on the person's relative concerns, on the perceived need, on the relative effectiveness with which charities use the funds, and on the purchasing power in different locations. Charities compete for donations, but even where donors practice "two-stage" budgeting, this does not mean that there is a zero-sum game.

In the case of development funding, time is of the essence. Optimistically, one can hope that there will come a time when world incomes will have sufficiently converged that the subject becomes redundant. Consideration needs therefore to be

given to the time path of giving. The paper has suggested a simplified model of giving over the life course, and this could be further elaborated.

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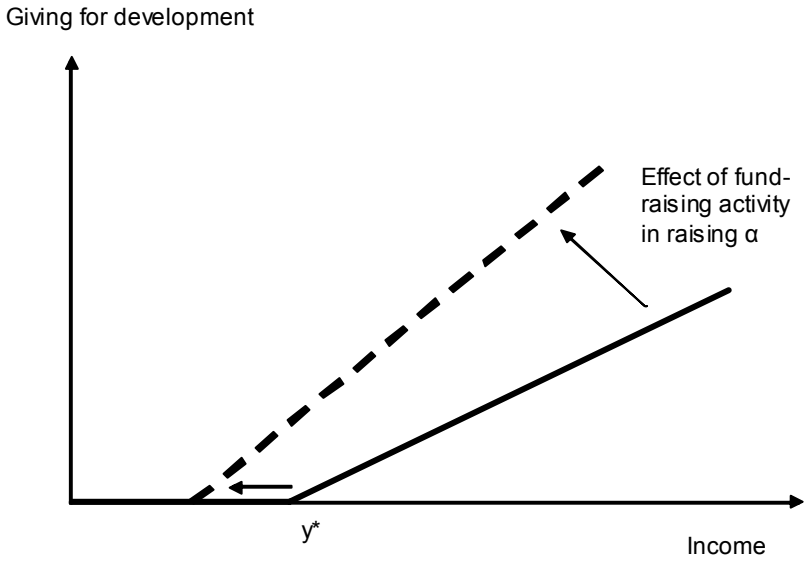

Figure 1 Giving for Development

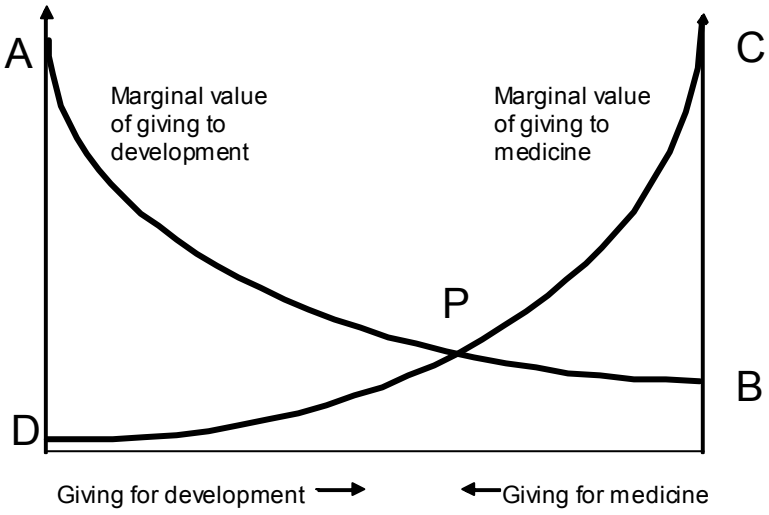

Figure 2 Choosing between giving for development and giving to a medical charity