

*Explaining the curve in the U-shaped curve**

Abstract

In a previous paper we have demonstrated that for the total population of households, including non-givers, lower income households participate less and donate smaller average percentages of their household incomes than do higher income households. In this paper we inquire about the relative generosity of that sub-population of households that actually donate to charitable causes. We base our analysis on data collected in the 1990 national survey of Giving and Volunteering in the United States conducted by the Gallup Organization for Independent Sector. In the first section we review the factors that differentiate the upward sloping curve describing the population of all households and the U-shaped curve describing the sub-population of contributing households. In the second section we demonstrate that a substantial proportion of the curvature in the U-shaped relationship operates through giving to religion. In the third section we show that giving by the 7 per cent of high givers increases the curvature while the giving by the 93 per cent of normal givers attenuates the curvature. In the fourth section we combine the previous two analyses by looking at the patterns of religious and non-religious giving for both normal and high givers. We conclude that income is not a reliable indicator of who is generous or selfish in regard to philanthropic giving.

Introduction

In a previous paper (Schervish and Havens, 1995a) we sought to correct the frequently stated but misleading notion that lower income groups contribute greater percentages of their income to charity than do higher income groups (for example, Nielsen, 1992; Independent Sector, 1992). In making our argument, we addressed two questions about the relative generosity of different income groups:

- Do lower income groups contribute more to charity than higher income ones?
- Is the U-shaped curve describing the percentage of income given by various income groups correct?

The most important consideration in addressing these two questions was to recognise that they refer to two different populations. The first question inquires about the relative generosity of *people* in general. It asks whether lower income households contribute more to philanthropy than higher income households. To answer this question, it was necessary to include in the analysis *all* the households in each income group, including *those that make no contribution*. We found that according to every one of a series of measures of relative generosity, lower income groups do not pay more. For the total population of households, including non givers, lower income households participate less and contribute smaller average percentages of their household incomes than do higher income households.

In contrast, the second question was examined with reference only to *contributors*. The relative generosity of only that sub-population of households that actually donate to charitable causes was explored. For such contributing households, we drew two conclusions. First, the (relatively small) percentage of lower income households that donate do in fact give a larger average percentage of their incomes than do the higher income households. Second, both groups give on average a greater percentage of their household incomes than do middle income households. Thus we responded to the question, 'Is the U-shaped curve correct?', with the answer, 'Yes, but only for the group of all contributors, and even then with some important caveats.'

In this paper we take our analysis of the U-shaped curve a step further by exploring those caveats. It turns out that, even among contributors, the U-shaped curve is not as steep as it first appears. Moreover, under certain conditions the curve can be shown to be virtually flat and, under other stricter yet reasonable conditions, even upwardly sloping. We proceed in four steps. In the first section we review the factors that differentiate the upward sloping curve describing the population of all households and the U-shaped curve describing the sub-population of contributing households. In the second section we demonstrate that a substantial proportion of the curvature in the U-shaped relationship operates through giving to religion. In the third section we continue the decomposition by demonstrating that giving by the 7 per cent of high givers increases the curvature while the giving by the 93 per cent of normal givers attenuates the curvature. In the fourth section we combine the previous two analyses by looking at the patterns of religious and non-religious giving for both normal and high givers.

We base our analysis on data collected in the 1990 national survey of Giving and Volunteering in the United States conducted by the Gallup Organization for Independent Sector (Hodgkinson and Weitzman, 1990).¹ We analyse only the cases where the respondent reported being head of household and where household income was reported.² The size of the resulting sample was thereby reduced from the original 2,727 to 2,253 cases or 83 per cent of the original sample.

There are several other methodological issues regarding Independent Sector data which are presented in our prior paper and its appendices. For the results presented in this paper, the most relevant issue involves the calculation of percentage of household income contributed.

The Gallup Organization collected and recorded household income by income bracket, with '\$100,000 or more' being the highest bracket. Following Independent Sector conventions for its calculation of percentage of income contributed, we used the midpoints of income brackets to represent household income, except for the highest bracket in which we used \$100,000 as an estimate of the household income. The use of the lowest income in the top bracket has the effect of overestimating the percentage of household income contributed for this category. This raises the issue of whether the right side of the U would be so high if we were able to calculate the percentage of income contributed using the actual (but unknown) household income figures for household in the highest bracket. This does not appear to be the case, however. First, our subsequent research (Schervish and Havens, 1995b) using actual data for upper income households indicates that as household income rises, the percentage of income contributed also increases. Second, excluding households in the highest income bracket from the analysis changes some of the details presented in the results but does not affect the substantive thrust of the findings. This is because the second highest bracket also contributes a higher than average percentage of its income, even though taking the midpoint of income for this group results in an underestimation of this group's percentage of income contributed.

Since this paper examines the curve in the U-shaped curve, the results are presented as graphs in the body of the text. (For readers interested in the numerical values associated with each of the data points plotted in the graphs, the Appendix Table contains the relevant numerical distributions for all of the graphs presented in subsequent sections. Each row of the table corresponds to the distribution of one variable by categories of household income. The entries of the table were calculated using the weighted subsample of the 2,253 households whose respondents reported being head of household.)

Philanthropic giving by all households versus contributing households

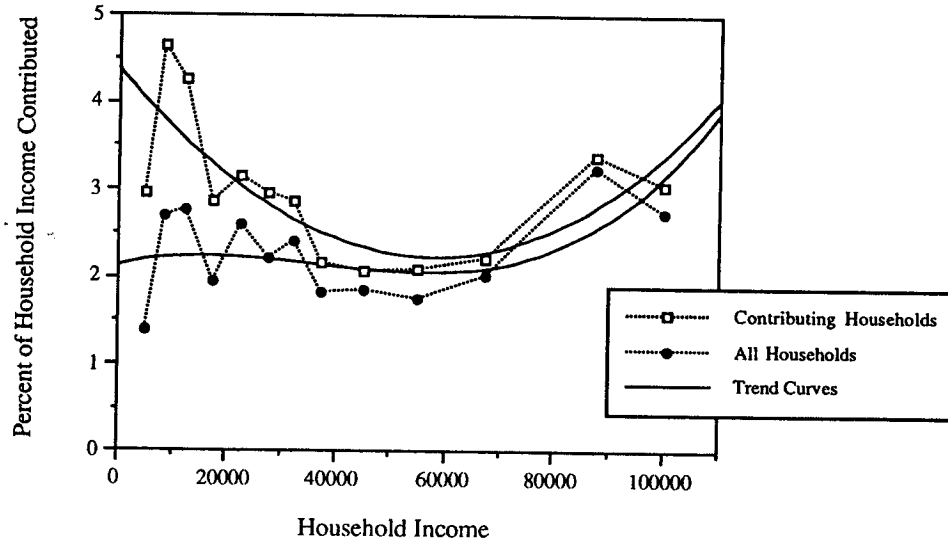
The major finding of our previous research is that the shape of the curve portraying the percentage of income contributed to philanthropy by income group depends upon the population being described. The lower curve in Figure 1 presents the trend for all households while the upper curve presents the trend for contributing households.³ When we consider all households, including those who do not make any charitable contributions, we obtain the upwardly sloping wavy curve that constitutes the bottom graph. As can be seen, the three lower income groups contribute from 1.4 to 2.8 per cent of household income while the three upper income groups contribute between 2.0 and 3.2 per cent of household income. When we consider contributing households only, the picture is dramatically different. The resulting representation is the familiar U-shaped curve charted by the upper graph. For contributing households, the three lower income groups contribute between 3.0 and 4.7 per cent of their income, the three upper income groups contribute between 2.2 and 3.4 per cent of their income, while the middle income groups contribute around 2.2 per cent.

The reason for the difference in the two curves is the level of participation. Only 47 per cent of the lowest income category contribute to philanthropy and less than 70 per cent contribute in income categories below \$20,000. This is starkly different from the participation rates of the three highest income categories where 90 to 95 per cent of households contribute to philanthropy. Taking these participation rates into account, then, enables us to explain the discrepancy between the upward sloping curve describing all households and the U-shaped curve describing just contributing households. In the remainder of the paper, we focus on the U-shaped curve. We examine those components that create its curvature in an effort to assess the conditions under which the U-shaped curve may be considered valid.

Contributions to religion

Religious contributions account for over 60 per cent of measured philanthropy. These are defined by Independent Sector as contributions to religious-related, spiritual development organisations including churches, synagogues, monasteries, convents, seminaries, and so on, but not giving to such organisations as church-affiliated schools, Catholic charities, nursing homes, Jewish federations, and so on (Hodgkinson and Weitzman, 1990, p.279). In addition to the sheer magnitude of religious contributions, religious organisations provide a variety of spiritual and non-spiritual activities in which the contributors may be

Figure 1: Average Percent of Household Income Contributed for Contributing and All Households



Source: Social Welfare Research Institute at Boston College analysis of data from the 1990 Survey of Giving and Volunteering in the United States collected by the Gallup Organization for the Independent Sector.

Note 1: In this figure, the upper curve is the trend for the percentage of income contributed by only those households who reported non-zero contributions. The lower curve is the trend for the percentage of income contributed by all households (including those who reported zero contributions).

Note 2: The points plotted in each series are average values for each income category; the precise values are presented in the Appendix table. The trend curves were statistically determined from the data using the least squares technique to estimate the coefficients of a third order polynomial for the relevant data series.

more regularly engaged than in activities associated with other types of philanthropic organisation. Whether from regularity of engagement, the perceived integrity and worthiness of the organisation, and/or the spiritual sustenance derived from the organisation, there appears to be something different about religious contributions that distinguishes them from contributions to other philanthropic causes. For these reasons, religious contributions should be examined separately from the aggregate of other contributions.

For the population as a whole, 78 per cent of households contribute: 55 per cent contribute to religious causes, 67 per cent contribute to non-religious causes, and 44 per cent contribute to both religious and non-religious causes. On average, households contribute 2.3 per cent of their incomes: 1.5 per cent to religious causes and 0.8 per cent to non-religious causes. Thus a greater proportion of households give to non-religious than to religious causes; but they give a smaller percentage of their income to non-religious causes.

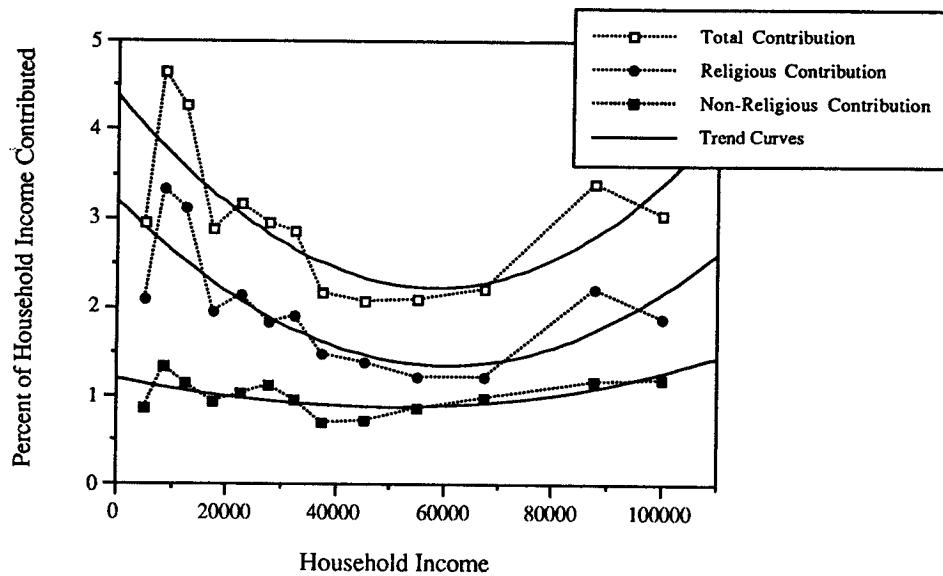
Percentage of income contributed to religious and non-religious causes

If we consider only contributing households, the average percentage of income contributed rises to 2.9 per cent: 1.9 per cent to religious causes and 1.0 per cent to non-religious causes. We now examine how these percentages vary with household income in order to see what effect this has on the U-shaped curve. Figure 2 plots the relationship between household income and percentage of income contributed to all causes, religious causes, and non-religious causes.

The figure shows that, at all income levels, contributing households give a larger percentage of their household incomes, on average, to religious causes than to non-religious causes. Lower income households give a larger percentage of their incomes to religion than do higher income households and both give larger percentages than do middle income households. Across all income groups the average percentage of income contributed to religious causes is approximately 1 percentage point lower than the average contributed to all causes, while a nearly constant 1 per cent of income is contributed to non-religious causes at nearly all income levels.

The decomposition of the U-shaped curve into contributions to religious and to non-religious causes demonstrates that most of the curvature can be attributed to contributions to religious causes. The lower curve is very shallow compared with the other two. In other words, lower income households contribute a disproportionately large percentage of their incomes to religion than do higher income households; and lower income households contribute nearly the same percentage of their incomes to non-religious causes as do higher income households.

Figure 2: Percent of Household Income Contributed by Contributing Households for Total, Religious, and Non-Religious Contributions



Source: Social Welfare Research Institute at Boston College analysis of data from the 1990 Survey of Giving and Volunteering in the United States collected by the Gallup Organization for the Independent Sector.

Note 1: In this figure, the upper curve is the trend for the total contribution as a percentage of income for households who reported non-zero contributions. The middle and lower curves are the trends for the percentage of income contributed to religious and to non-religious organizations, respectively, by these same households.

Note 2: An explanation of the meaning of the plotted points and the derivation of the trend curves is given in note 2 of figure 1.

Participation rates and religious contributions

For contributing households, 71 per cent contribute to religious causes and 86 per cent contribute to non-religious causes — 14 per cent contributing just to religious causes, 29 per cent just to non-religious causes, and 57 per cent to both. We may examine how these proportions vary with household income. Figure 3 compares the proportion of contributing households that contribute only to religious causes (lower curve), only to non-religious causes (middle curve), and to both religious and non-religious causes (upper curve) as household income varies.

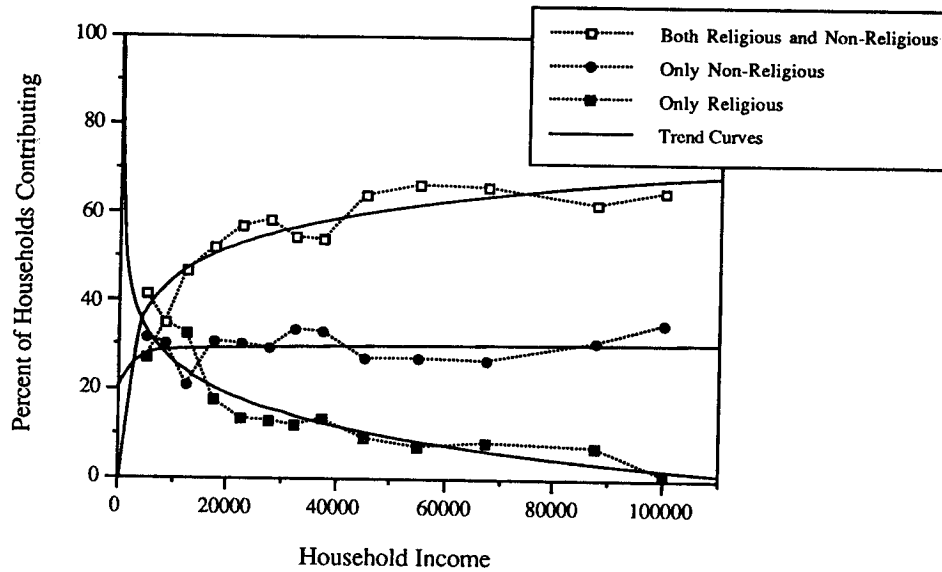
The proportion of contributing households that contributes to both religious and non-religious causes rises from approximately 40 per cent to approximately 70 per cent as household income rises. The proportion that contributes only to non-religious causes is nearly constant at 29 per cent at all income levels. The proportion that contributes only to religion declines from about 30 per cent at the lower income levels to zero at the highest income level. Among lower income households, somewhat more (40 per cent) give to both religious and non-religious causes than the fairly large fraction (30 per cent) that give only to religion. As income increases, households give not only to religion but also to non-religious causes.

The role of high contributors

Guided by the findings of Auten and Rudney (1990), we examined the distributions of contributions at different income levels. The distributions are positively skewed, with a small number of relatively large contributors and a large majority of more modest contributors. To operationalise the concept of a high relative to a normal contribution, we calculated the mean contribution and its standard deviation for contributing households in each income level. Households whose contribution were more than 2 standard deviations above the mean within each income level were classified as high givers and their contribution as a high contribution. All other contributors were classified as normal contributors making normal contributions.

Using this definition, we find that 5 per cent of all households and 7 per cent of contributing households are classified as high givers. Among high giving households, 95 per cent contribute to religious and 88 per cent contribute to non-religious causes: 12 per cent only to religious, 5 per cent only to non-religious, and 83 per cent to both religious and non-religious causes. On average, high giving households

Figure 3: Percent of Contributing Households that Contribute to Both Religious and Non-Religious, to Only Non-Religious, and to Only Religious Organizations



Source: Social Welfare Research Institute at Boston College analysis of data from the 1990 Survey of Giving and Volunteering in the United States collected by the Gallup Organization for the Independent Sector.

Note 1: In this figure, the upper curve is the trend for the percentage of contributing households that make contributions to both religious and non-religious organizations. The middle and lower curves are the trends for the percentage of households that contribute only to non-religious and only to religious organizations, respectively.

Note 2: The trend curves were statistically determined from the data using the least squares technique to estimate the coefficients for a logarithmic function of income for the relevant data series.

contribute 14.6 per cent of their incomes to philanthropy: 10.4 per cent to religious and 4.2 per cent to non-religious causes.

All contributing households that are not high givers are classified as normal givers. We find that 73 per cent of all households and 93 per cent of contributing households are normal givers. Among normal giving households, 69 per cent give to religious and 86 per cent give to non-religious causes: 14 per cent only to religious, 31 per cent only to non-religious, and 55 per cent to both religious and non-religious causes. On average, normal giving households contribute 2.0 per cent of their incomes: 1.3 per cent to religious and 0.7 per cent to non-religious causes.

Percentage of income given by high and normal givers

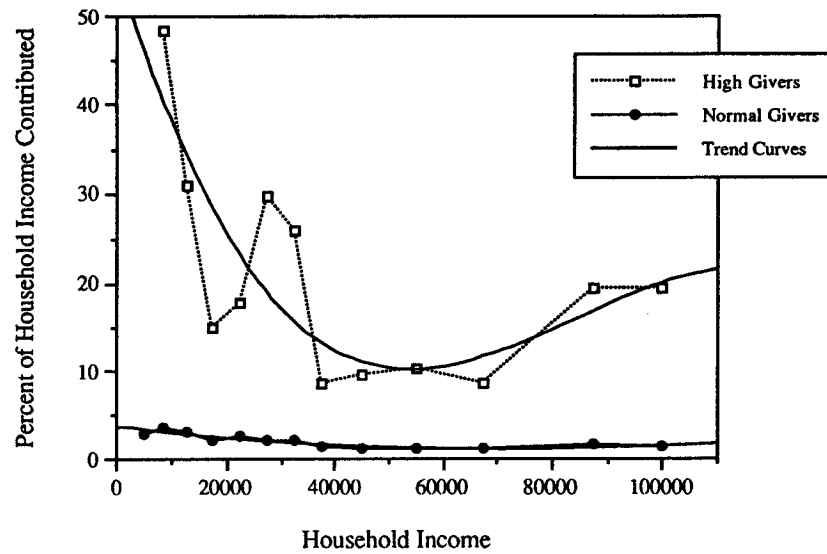
Figures 4a and 4b present the average percentage of household income contributed by the group of high givers and by the group of normal givers. Among the group of high givers, low income households (a total of ten cases in the three lowest income categories)⁴ contribute a substantially larger percentage of their incomes (30 per cent to 50 per cent) as compared with higher income households (20 per cent) and middle income households (10 per cent). Moreover, as we will see, there are approximately twice as many high givers in higher income households than in lower income households.

Compared with the graph of high givers, the graph of normal givers appears nearly flat. However, as indicated by Figure 4b in which the vertical axis has been expanded to the same scale used in previous graphs, there is in fact quite a clear U-shaped curvature to normal giving. Again, the graph for normal givers exhibits the usual pattern of lower income households contributing a greater percentage of their incomes (3 to 3.6 per cent) than do higher income households (1.4 to 1.7 per cent) and both groups contribute greater percentages, on average, than do upper-middle income households (1.2 to 1.5 per cent). Still it is true that in absolute terms, the average contribution made by the higher income households is larger than the average contribution made by other income groups, including lower income households.

Distribution of high givers by income

By definition, every high giver contributes more than every normal giver in the same income category. But how are the high givers distributed by income? Figure 5 presents the proportion of all households (contributors and non-contributors) that are high giving households within each income category. Although relatively generous

Figure 4A: Percent of Household Income Contributed by High Giving and Normal Giving Households

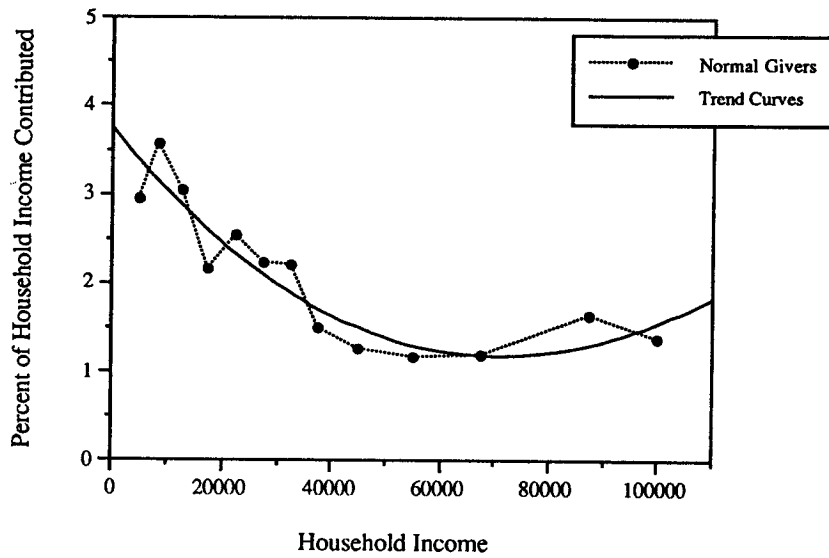


Source: Social Welfare Research Institute at Boston College analysis of data from the 1990 Survey of Giving and Volunteering in the United States collected by the Gallup Organization for the Independent Sector.

Note 1: In this figure, the upper curve is the trend for the percentage of income contributed by contributing households classified as high givers, as explained in the text. The lower curve is the trend for the percentage of income contributed by contributing households classified as normal givers, also as explained in the text.

Note 2: An explanation of the meaning of the plotted points and the derivation of the trend curves is given in note 2 of figure 1.

Figure 4B: Percent of Household Income Contributed by Normal Giving Households

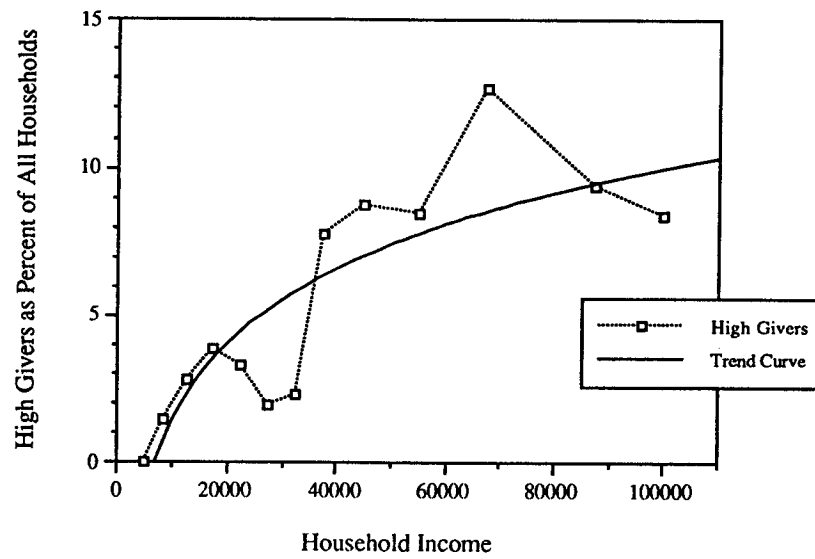


Source: Social Welfare Research Institute at Boston College analysis of data from the 1990 Survey of Giving and Volunteering in the United States collected by the Gallup Organization for the Independent Sector.

Note 1: This figure expands the scale on the vertical axis and redraws the data points and trend curve for normal givers, the lower data series and trend curve from figure 4A.

Note 2: An explanation of the meaning of the plotted points and the derivation of the trend curves is given in note 2 of figure 1.

Figure 5: High Giving Households as Percent of All Households



Source: Social Welfare Research Institute at Boston College analysis of data from the 1990 Survey of Giving and Volunteering in the United States collected by the Gallup Organization for the Independent Sector.

Note: In this figure the curve is the trend for the percentage of all households who are high givers. See note 2 in figure 3 for an explanation of its derivation.

contributors appear throughout the income range, there are fewer of them at lower income levels than at higher income levels. Below \$35,000 income, fewer than 4 per cent of households in each income category are high givers while above \$35,000 at least 7 per cent in each income category are high givers. Stated differently, there is more uniformity in the level of contributions at lower income levels than at higher income levels, and high givers are more concentrated among the higher income than among the lower income households. We again find that on the basis of the percentage of relatively high giving households, the higher income households are more generous than the lower income households.

The joint role of religion and contribution status

We have already seen (Figure 2) that much of the variation in percentage of income contributed by income class can be attributed to religious contributions. That is, there is relatively little variation among income categories in the percentage of income contributed to non-religious causes. Is this finding sufficiently robust so that a similar finding holds for high givers and normal givers?

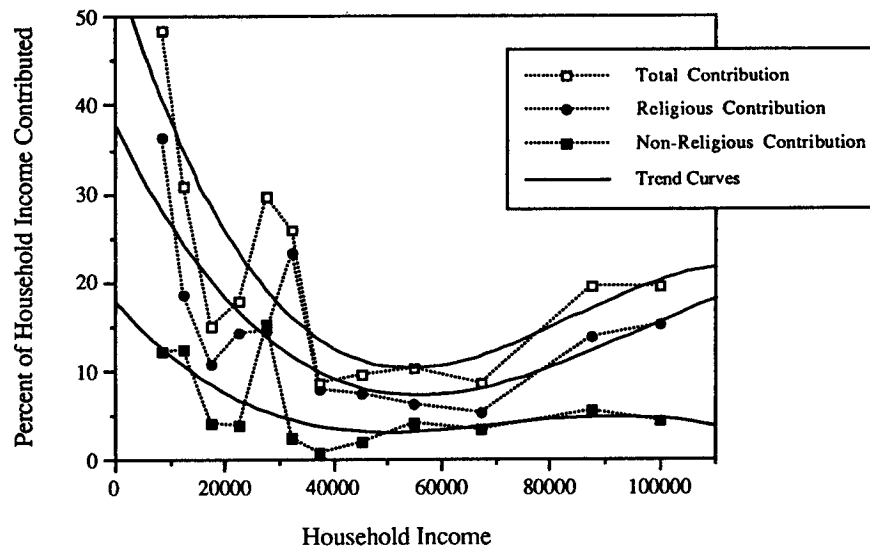
Figure 6 presents the percentage of income contributed to all causes, religious causes, and non-religious causes by household income for high givers. Figure 7 presents the same information for normal givers. In each case most of the variation in the percentage of income contributed to all causes can be attributed to variation in contributions to religion. The curves for religious contributions nearly parallels the curves for total contributions.

There is much less variation in non-religious contributions by household income, but the relatively small proportion of high contributors at lower income levels still contribute higher percentages of income to non-religious causes compared to middle and higher income households. Among the 93 per cent of contributors who constitute the normal contributors, however, there is little or no variation by income in percentage of income contributed. Even in terms of percentage of income contributed and even restricted just to contributors, normal givers are equally generous at all income levels with respect to non-religious contributions.

Religion revisited

To this point we have seen that much of the curvature in the U-shaped relationship is due to religious contributions while significantly less is due to non-religious contributions. We have also seen that among

Figure 6: Percent of Household Income Contributed by High Giving Households for Total, Religious, and Non-Religious Contributions

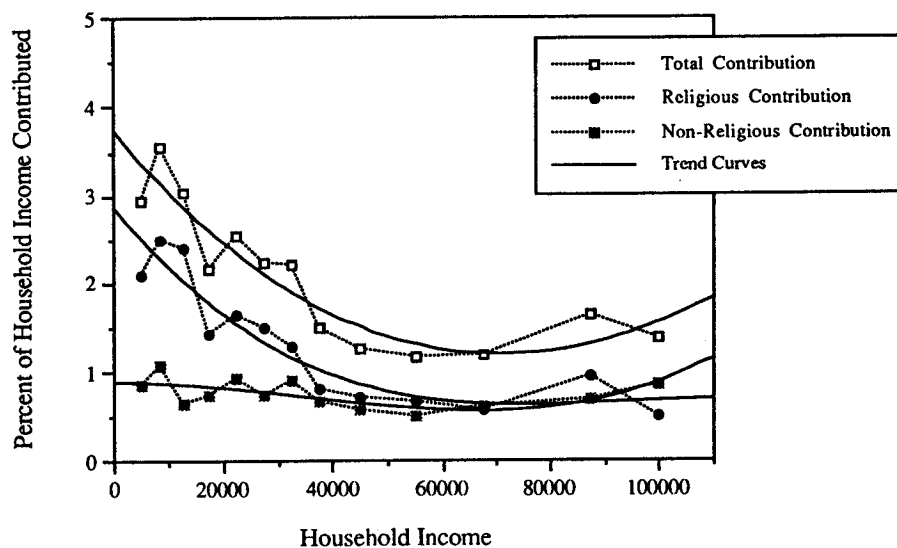


Source: Social Welfare Research Institute at Boston College analysis of data from the 1990 Survey of Giving and Volunteering in the United States collected by the Gallup Organization for the Independent Sector.

Note 1: In this figure, the upper curve is the trend for the total contribution as a percentage of income for high giving households. The middle and lower curves are the trends for religious and non-religious contributions, respectively, for these same households.

Note 2: An explanation of the plotted points and derivation of the trend curves is given in note 2 of figure 1

Figure 7: Percent of Household Income Contributed by Normal Giving Households for Total, Religious, and Non-Religious Contributions



Source: Social Welfare Research Institute at Boston College analysis of data from the 1990 Survey of Giving and Volunteering in the United States collected by the Gallup Organization for the Independent Sector.

Note 1: In this figure, the upper curve is the trend for the total contribution as a percentage of income for normal giving households. The middle and lower curves are the trends for religious and non-religious contributions, respectively, for these same households.

Note 2: An explanation of the plotted points and derivation of the trend curves is given in note 2 of figure 1.

the 93 per cent of contributors who are normal givers, the U-shape curve is attenuated. What do we find when we combine the two contrasts by looking at religious and non-religious giving for high and normal givers? Religious contributions obey a U-shaped relationship for both high and normal givers. However for non-religious contributions we find that there remains an attenuated U-shape curve among high givers but a nearly horizontal relationship among normal givers. In other words, the normal givers contribute roughly a constant 1 per cent of their incomes, on average, to non-religious causes at all income levels. This is not the end of the story, however. There is an additional characteristic of religious contributions that flattens the U-shaped curve considerably.

Religious contributions as partial user fees

Religious organisations as a group are the most frequent recipient of charitable gifts and in total dollars receive more than any other single category of philanthropy. But there is an important reason for considering a substantial proportion of religious contributions to be something other than philanthropy. Hodgkinson et al. (1988) estimate that approximately 70 per cent of religious contributions go toward supporting the routine activities of a congregation that serve its members. This money pays for a congregation's pastoral and professional staff, utilities, building maintenance, music programme, worship services and religious education. The portion of contributions that support such services may, in fact, be considered user fees that underwrite benefits directly consumed by members of a congregation. The remaining 30 per cent of religious giving constitutes a purely philanthropic component, as it is devoted to charitable purposes beyond the congregation. The implications for the shape of the U-shaped curve are considerable. If, in fact, a substantial proportion of religious contributions is a form of membership dues, and if the pattern of religious giving is a major source of the U-shaped curve, then excluding the user-fee portion of religious contributions should further flatten the U-shaped curve.

Admittedly, this approach is controversial since there are several other areas of philanthropy where contributors are also recipients of services and where at least part of a donation may be considered a user fee. For example, high-income contributors to a philharmonic orchestra who also hold season tickets to the orchestra's performances may be considered to be achieving two purposes. On the one hand, they are paying a user fee with the fraction of their contribution that goes toward their entertainment. On the other hand, they are making a philanthropic contribution with the fraction that subsidises ticket prices for other members of the audience and finances benevolent

activities of the orchestra such as benefit performances and youth concerts. Ideally, we should take into account this and other types of consumption philanthropy (Schervish and Herman, 1988). But we single out religious contributions because they constitute approximately 65 per cent of individual cash contributions donated by approximately 71 per cent of households and because, as such, the pattern of religious contributions affects so strongly the pattern of overall contributions.

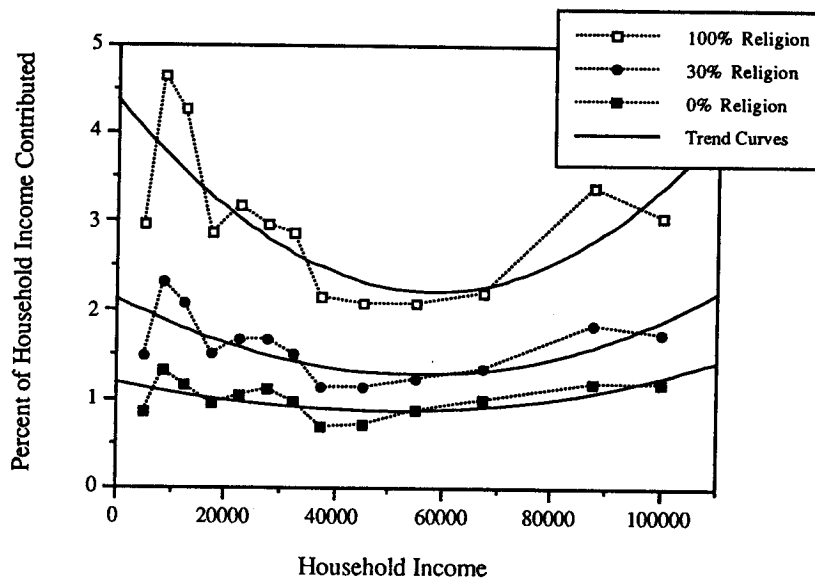
Despite the controversial nature of this approach, we believe it is justified on a number of grounds. First, Biddle (1992) in an exceptionally careful analysis of congregational spending, confirms the split between mutual-benefit and charitable giving components of religious contributions to be 70 per cent and 30 per cent, respectively. Second, there is reason to believe that the proportion of religious contributions that are user fees is higher at the lower end of the income distribution. If the fee for services were a fixed fee, as say the fee for a haircut, then only that part of a contribution above the fixed fee level should be considered as pure philanthropy. In this case, the percentage of income to be considered religious philanthropy would be closer to zero at lower income levels and rise as household income rises. Under this assumption part of the purely philanthropic contribution of the higher income households would be devoted to subsidising the religious services received by lower income households. For the following analysis, we adopt the more conservative assumptions: (1) we assume that 70 per cent of each religious contribution to be a fee for service, and (2) that this proportion prevails across income groups.

Figure 8 presents the scatter plots for three relationships for contributing households: (1) percentage of income contributed including the entire contribution to religious causes; (2) percentage of income contributed in which only 30 per cent of contributions to religious causes is considered pure philanthropy; and (3) percentage of income contributed in which no contribution to religious causes is included.

The upper curve is the relationship between percentage of income contributed (all of religious contributions being included) and household income. It is the same curve presented in Figures 1 and 2. The middle curve (30 per cent of religious contributions included as philanthropy) continues to exhibit the U-shaped pattern but is distinctly more shallow and attenuated in curvature. The lower curve represents the percentage of income contributed to non-religious organisations and has very little curvature at all.

It is clear that if one assumes that 70 per cent of all religious contributions constitute a user fee for services consumed, lower income households making contributions still contribute a larger proportion of their incomes than do households at higher income levels but the differential has decreased from approximately 1.5 per cent to less than

Figure 8: Percent of Household Income Contributed by Contributing Households Calculated to Include 100%, 30%, and 0% of Religious Contributions



Source: Social Welfare Research Institute at Boston College analysis of data from the 1990 Survey of Giving and Volunteering in the United States collected by the Gallup Organization for the Independent Sector.

Note 1: In this figure, the upper curve is the trend for the total contribution, including 100 percent of religious contributions, calculated as a percentage of income for only those households who reported non-zero contributions. The middle and lower curves are the corresponding trends when 30 percent and 0 percent of religious contributions, respectively, are included in the total contribution.

Note 2: An explanation of the plotted points and derivation of trend curves is given in note 2 of figure 1.

1 per cent. It is still the case, moreover, that middle income households continue to contribute smaller percentages than do either lower or higher income households. The lower graph indicates that lower income households contribute nearly the same proportion of their incomes to the aggregate of all non-religious philanthropic organisations as do either middle or upper income households. In fact, the graph of the relationship is nearly a horizontal line. The curvature in the upper U-shaped curve can be almost completely attributed to religious contributions.

Two conclusions emerge with respect to religious contributions. First, when only 30 per cent of religious contributions are included as philanthropy, the U-shaped curve becomes substantially attenuated, indicating that much of the U shape is due to religious contributions, especially at lower income levels. Second, as we have also seen in previous sections, nearly all the of the higher percentage of income contributed by lower income households as compared with higher income households can be attributed to religious contributions.

Conclusion

This paper goes beyond our previous work (Schervish and Havens, 1995a) where we demonstrated that when non-contributing households are included in the analysis along with contributing households, there is no evidence to support the popular notion of a U-shaped relationship between percentage of income contributed to charity and income. In this article, we explain why the existence of a U-shaped relationship is questionable even for contributing households.

When we confine our analysis just to contributing households, we discover that most of the U-shaped relationship among contributors is due to religious contributions and to a relatively small group of high-giving households at all income levels. First, most of the curvature is due to religious giving so that, when only 30 per cent of religious contributions are considered to be philanthropic giving, the lower income (left side) of the U is substantially reduced. Second, when we distinguish between high givers and normal givers, we find that the U-shaped relationship exists for the 3 per cent of high givers but is dramatically attenuated for the 97 per cent of normal givers. When we include all households in the analysis, there is no U-shaped relationship. And when we include only contributing households, the apparent U-shaped relationship becomes increasingly flattened the more we exclude religious giving and focus on normal givers.

Together with our previous work, the foregoing analysis supports the general argument that income is not a reliable indicator of who

Appendix Table. Philanthropic giving by household income

Measure of philanthropy	Category of household income (\$)													All households
	<7000	7000-9999	10000-14999	15000-19999	20000-24999	25000-29999	30000-34999	35000-39999	40000-49999	50000-59999	60000-74999	75000-99999	100000	
Participation rate of each income band	46.64	58.11	64.87	67.72	82.33	75.07	83.87	84.16	88.83	84.70	91.36	95.45	90.21	77.80
% of income contributed by														
all households	1.38	2.70	2.76	1.95	2.60	2.21	2.39	1.81	1.84	1.76	2.01	3.24	2.75	2.22
contributing households	2.95	4.65	4.26	2.87	3.16	2.95	2.85	2.15	2.07	2.08	2.20	3.39	3.05	2.86
% income of contributing households														
to religious organisations	2.10	3.32	3.11	1.94	2.13	1.84	1.89	1.47	1.37	1.22	1.22	2.22	1.87	1.89
to non-religious organisations	0.85	1.33	1.15	0.93	1.03	1.11	0.96	0.69	0.71	0.86	0.98	1.17	1.18	0.97
% of contributing households														
to religious and non-religious orgs	41.60	35.06	46.92	51.84	56.85	58.20	54.50	53.77	64.06	66.14	65.95	62.16	64.62	56.84
to non-religious organisations only	31.65	30.22	20.49	30.88	30.06	29.22	33.66	32.86	27.06	27.11	26.25	30.81	34.76	29.23
to religious organisations only	26.75	34.71	32.59	17.28	13.09	12.58	11.84	13.37	8.88	6.75	7.79	7.03	0.62	13.93
% of income contributed														
by high givers	-	48.51	30.95	14.89	17.94	29.63	25.89	8.70	9.42	10.32	8.50	19.43	19.43	14.60
by normal givers	2.95	3.56	3.05	2.16	2.55	2.23	2.21	1.49	1.27	1.16	1.18	1.65	1.37	2.01
High givers as a % of all households	0	1.41	2.82	3.82	3.29	1.97	2.26	7.74	8.75	8.50	12.70	9.37	8.42	5.25
% of income of high givers														
to religious organisations	-	36.39	18.50	10.74	14.22	14.44	23.37	7.97	7.43	6.29	5.24	13.82	15.16	10.42
to non-religious organisations	-	12.11	12.45	4.16	3.73	15.19	2.52	0.73	1.99	4.03	3.27	5.61	4.26	4.18
% of income of normal givers														
to religious organisations	2.10	2.50	2.41	1.42	1.63	1.50	1.29	0.81	0.71	0.66	0.57	0.96	0.51	1.27
to non-religious organisations	0.85	1.06	0.64	0.74	0.92	0.74	0.91	0.68	0.57	0.50	0.61	0.69	0.86	0.74

% income by contributing households														
100% religious	2.95	4.65	4.26	2.87	3.16	2.95	2.85	2.15	2.07	2.08	T2.20	3.39	3.05	2.86
30% religious	1.48	2.32	2.08	1.51	1.67	1.67	1.52	1.13	1.12	1.23	T1.35	1.84	1.74	1.54
0% religious	0.85	1.33	1.15	0.93	1.03	1.11	0.96	0.69	0.71	0.86	T0.98	1.17	1.18	0.97

Source: Data from the 1990 Survey of Giving and Volunteering in the United States conducted by the Gallup Organization for Independent Sector. Analysis was performed at the Social Welfare Research Institute at Boston College.

is generous or selfish in regard to philanthropic giving. Even for contributing households alone, a close scrutiny of the relationship between income and percentage of income contributed indicates that income is not a predictor of generosity. Our current research makes us optimistic that we may eventually be able to locate and unlock some of the actual sources of generosity. Meanwhile, we can now conclude with confidence that the U-shaped curve is not the point of departure for such research.

Notes

- ^a Associate Professor of Sociology and Director of the Social Welfare Research Institute at Boston College, Chestnut Hill, Massachusetts.
- ^b Senior Research Associate at the Social Welfare Research Institute at Boston College.
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- 1 A brief description of this dataset and a discussion of technical difficulties encountered in its use are presented in Appendix A of Schervish and Havens (1992).
- 2 One lower income case was also eliminated because its reported characteristics seemed too inconsistent to be true. The respondent was a young male head of household with less than a high school education, married with more than 4 children in the household, with gross household income of \$7,000 to \$10,000 per year and contributing approximately \$8,000 distributed among most of the fourteen categories of philanthropy.
- 3 Each trend curve was estimated by conventional least squares regression techniques. The best-fitting trend lines were generated by estimating the percentage of household income contributed as a function of household income, household income squared, and household income cubed. That is, the simplest estimation that could capture the non-symmetric curvature apparent in the scatter plots was that of a third-order polynomial rather than of a straight line. This same method was used to calculate all the trend curves presented in this article, with the exception of the trend curves relating income to participation rates. In these cases, we substituted logarithm of income for income in our linear regressions.
- 4 There are no high giving households in the lowest income category (less than \$7,000) and only two and eight such households in the next two low income categories, respectively. Thus the average percentages are based on

a very small sample of households. Moreover, examination of these cases in more detail raises questions concerning the validity of recorded responses. Nevertheless, we have included these cases in the analysis in lieu of definitive evidence that the data are in error.

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