Limits of Social Influence on Giving: Who is Affected When and Why?

René Bekkers*

Center for Philanthropic Studies, VU University Amsterdam

Paper presented at 'Social Influences and charitable giving'

24th February 2012, Royal Over-seas League, London

In this paper I present evidence from tax records and three large scale field experiments testing social influence effects on giving in the Netherlands. The experiments are conducted among university alumni (n=6,672) and among large random samples of the Dutch population (n=1,474; n=1,765). Also tax records are used to test peer effects among a very large random sample (n=172,947) of citizens in the Netherlands. The experiments show evidence for positive but weak social information effects on small donations. Social information effects are stronger in conditions in which people are actively imagining what others are giving. The tax records show that amounts donated by high level donors (exceeding 1% of income) are strongly sensitive to changes in the tax price as well as to changes in giving by other high level donors in the area of residence.

*René Bekkers, Center for Philanthropic Studies, Faculty of Social Sciences, VU University Amsterdam. Address: De Boelelaan 1081, 1081 HV Amsterdam, The Netherlands. E-mail: r.bekkers@vu.nl

Acknowledgements

There is overwhelming evidence from empirical research on philanthropy for social influences on giving (Bekkers & Wiepking, 2011a). Decisions of individuals and households about how much to give and which charities to give to are affected by the behaviour of other people around them and the communities they live in. Social influence effects contribute to regional differences in philanthropy (Bekkers, forthcoming). One type of social influence that has received significant attention in the past years is the effect of social information. Social information effects occur when people react to information about the behaviour of others.

The evidence on effects of 'social information' and a variety of other effects of the social context in which people make decisions on giving have given rise to optimism about the possibility to 'nudge' (Thaler & Sunstein, 2008) people into higher giving (House of Lords, 2011). Indeed some of the findings on social influences on giving as reported in empirical studies discussed below are quite strong. Yet few studies have tested the boundary conditions for effects of social influences. Both from a practical point of view and a scientific perspective it is important to know whether social influences have generic effects, regardless of context or donor characteristics, or whether the effects are limited to specific contexts and donors.

In the current paper I present evidence on the limits of social influences on giving, casting doubt on the potential to use social influence in order to get people to give more. Data from three large scale field experiments on social information effects on giving in the Netherlands show that suggesting a reference contribution (study 1) and knowing that a higher proportion of the population donated to a specific cause (study 2 and 3) increase giving. However, the effect of social information is not increasing strongly with the proportion of others who are giving (study 2). Neither do people seem to imitate information about the exact amount donated by others (study 2). I also show that social information effects are stronger in conditions

in which people are actively imagining what others are giving and among participants who perceive more positive social norms on giving and who expect a higher level of giving among others (study 3) .

The experimental evidence is weaker than the evidence from tax records on high level donations (exceeding 1% of income) among a sample of 172,947 citizens in the Netherlands. The tax records show that amounts donated by high level donors are strongly sensitive to changes in the tax price as well as to changes in giving by other high level donors in the area.

An overview of social information effects on giving

Social information effects on donations to charitable causes are generally found to be positive (Bekkers & Wiepking, 2007). Several studies show that the likelihood of giving increases when individuals learn that other individuals are donating money. In addition, some studies show that amounts donated increase with social information as well.

In a field experiment with contributions to social funds among Swiss university students, Frey and Meier (2004) found that the statement that 46% of fellow students are contributing increased the proportion of donors from 72.9% to 74.7%, and the statement that 64% of fellow students are contributing increased the proportion of donors to 77.0%.

In a field experiment with renewed contributions to a public radio station, Shang & Croson (2009) find that people adapt their giving to the group norm. Individuals hearing that others donated more than they had donated in the previous year tended to increase their level of giving, by 12% on average. In a follow-up study using a similar design, Shang & Croson (2008) found that upward social information increased donations (10%) less than downward social information decreased donations (26%).

In their field experiment with donations to a natural park in Costa Rica, Alpizar, Carlsson and Johansson-Stenman (2007) found that announcing that the 'typical contribution' was $10 increased donations by about 50 cents (18%).

In a field study with donations to an art gallery, Martin & Randall (2008) found that the display of a few large denomination bills ($50) resulted in higher donations per donor ($2.39) than the display of a large amount of (50¢) coinage ($1.69). However, the participation rate was lower in the $50 condition (2.34%) than in the 50¢ condition (3.37%). As a result, no difference in the total amount contributed emerged. However, the total amount donated was lower in a condition in which no previous amounts were displayed.

Other experiments have manipulated social information in 'dictator games' in which donations benefited anonymous other participants as recipients. In a laboratory experiment, Krupka and Weber (2009) found that observing other participants donate money increased giving at least $1 to 54% from 33% in the control condition. Moreover, focusing participants' attention on what others should do increased giving even more strongly, to 72%. This condition makes the norm (to give) salient to the participants. In a dictator game with anonymous others identified as recipients, Servatka (2009) observed a correlation of .13 between donations and observed donations by other participants in the same game prior to the decision.

Mechanisms that explain social information effects

Two mechanisms are commonly assumed to underlie social information effects: reputation and efficacy. The reputation mechanism stems from social image concerns, and may emerge from two conceptually distinct motives: the desire to conform to social norms and the desire to obtain

prestige. Both the conformity and prestige motive result in an upward shift in donations when individuals are presented with positive information about the giving behaviour of others.

Those who seek to conform to the norm will imitate the level of giving by others. In situations where individuals are solicited for contributions the base line is a gift of zero. Social information will then increase the level of giving. Note, however, that if the base line is above zero, as in cases where previous donors are presented with social information, social information may also lower donations if the level of giving by others is below the base line. The positive effect reported by Frey & Meier (2004) of mentioning that 46% of fellow students are contributing is remarkable since the participants on average expected that a higher proportion (57%) would contribute.

Those who seek to obtain prestige will 'outgive' others in order to stand out and be noticed. At the end of the 19th century, the sociologist Veblen (1899) identified acts of philanthropy by the New York elite as forms of conspicuous consumption stemming from a prestige motive.

Social information effects have been offered as one element in the explanation for the high level of giving in telethons. In the case of the national campaign in the Netherlands to raise funds for Tsunami victims (December 2004), aired on television during the Christmas holiday, individuals and corporations were given the opportunity to showcase their generosity. The display of generosity by others generates a norm, that influences the level of giving by those who have not donated yet.

Limitations to social information effects

Uncertainty - The usefulness of information about the behaviour of others is higher when one is uncertain about what is appropriate. Cialdini (2007) calls this the principle of 'social proof': when people are uncertain about group norms, they look for cues about the behaviour of others. In the absence of observations of donations by other people, they may refrain from giving. Latané and Darley (1970) explained the bystander effect – people are more likely to refrain from helping when a higher number of others are present who are not helping – as a result of uncertainty about the true need for help. If helping was not unambiguously needed, observing others who do not help leads people to the inference that help may not really be needed. The Shang & Croson (2008) experiment shows that people may align their own behaviour to the group norm receive when they receive information about the giving behaviour of others. The reference contribution should not diverge too much from the contribution expected of others (Shang and Croson, 2006; Verhaert & Van den Poel, 2011). If the reference contribution is too high, people will interpret the group norm as something they cannot adhere to, or they will simply not believe the information provided. In this case, they will refrain from conformity to the norm. The consistent finding that increasing the reference contribution decreased the participation rate (Martin & Randall, 2008; Alpizar, Carlsson & Johansson-Stenman, 2007) fits with this hypothesis. The *uncertainty hypothesis* tested in the current paper is:

   H1. Uncertainty about the behaviour of others increases the social information effect on donor behaviour.

   In study 1 the uncertainty hypothesis is tested by providing a reference contribution in a context in which potential donors are uncertain about the behaviour of others. In study 3 the

uncertainty hypothesis is tested by providing social information to donors with varying levels of knowledge about the giving behaviour of others.

Participation - Information about giving may consist of two parts: information about how many others donate, and information about how much is donated. I argue that the most important type of information is how many people donate in a specific situation. Information on how much people donate may become salient when it is known that all people donate. As Shang and Croson (2008) argue, most of the experiments on social information have found effects of participation rates. The *participation hypothesis* tested here is that

H2. *Information on the proportion of people donating affects donor behaviour, but not information on the amount donated by others.*

In study 2, a random sample of the Dutch population received information about both the proportion of the Dutch population that donates to charitable causes as well as how much people donate on average. In study 4, donations by a large sample of the population in the Netherlands exceeding 1% of income reported to the tax authorities in order to receive an income tax deduction are examined. From the *participation hypothesis* it is expected that high-level giving among individual tax payers is more strongly affected by a larger proportion of high level donors in the area than by higher amounts donated.

Social norms - Another condition that enhances the effects of social information is the social norm on charitable giving. In situations where giving is the socially appropriate thing to do, donations should be more common when they can be observed by others. However, in situations where giving runs against a salient norm, donations should not become more common. In

contrast, one would actually expect donations to become less common in situations where a norm of self-interest prevails. In a series of studies, Miller and colleagues (Miller, 1999; Miller & Ratner, 1998) have shown that a norm of self-interest poses an obstacle to generous impulses. When such a norm of self-interest prevails, donations may only be triggered when giving is likely to yield some benefits for oneself. This is what Holmes, Miller & Ratner (2002) found in their field study. When selling candles worth $0.75 to $3.25 people were more likely to donate then when no candles were offered. The *perceived social norm hypothesis* tested here is that

H3. Social information affects donor behaviour more strongly among donors who perceive the social norm to be more positive about giving.

The *perceived social norm hypothesis* is tested in study 3 with a comparison of social information effects among citizens reporting different norms in their social environment.

Group differences - It is likely that social information has more pronounced effects on some groups of donors with specific characteristics than others. In an explorative manner several characteristics of donors are examined as potential moderators of social information effects. One such characteristic is gender. Croson, Handy & Shang (2010) find that that males are more sensitive to social information than females. Rigdon, Ishii, Wataba & Kitayama (2011) find that males are more sensitive to implicit cues of being watched than females.

Another characteristic that may moderate the influence of social information is the level of education. The level of education is one of the most consistent predictors of charitable giving in survey research on philanthropy (Bekkers & Wiepking, 2011b). Experimental studies, however, often rely on convenience samples of students. It is unknown to what extent regularities detected among students can be generalized to broader populations with lower levels

of education. Study 2 and 3 take advantage of the heterogeneity in random samples of the Dutch population to test the generality of social information effects.

Study 1: Uncertainty reduction, social information and giving

The current experiment tested the *uncertainty hypothesis* that social information is more strongly affecting donor behaviour when people are uncertain about the norm. Utrecht university alumni received fundraising letters soliciting contributions for a scholarship fund. Fundraising by universities among their alumni is a relatively new phenomenon in the Netherlands (Breeze, Wilkinson, Schuyt & Gouwenberg, 2011). Universities in the Netherlands are primarily funded by government subsidies and tuition fees. Philanthropic contributions constitute a tiny part of university budgets. Recently, however, most universities have increased investments in alumni programs and fundraising. The programs allow alumni to remain active in their alma mater. For instance, Utrecht University has started a mentoring program in which alumni support new students. The first fundraising campaign at Utrecht University that actively solicited contributions from alumni for specific programs took place only in 2007. In this specific context, alumni face uncertainty about the appropriate contribution amount. The present experiment took advantage of this situation of high uncertainty to test the effect of suggesting a contribution amount. A specific amount was suggested to potential donors to reduce uncertainty about the norm. The reference contribution was chosen to be somewhat higher than the average typical contribution.

<u>Design</u>

The experiment included two conditions. In the SUGGEST condition, a contribution amount was suggested to reduce the uncertainty about the typical donation. In this condition, participants read that "We will be helped considerably if everyone participates and donates 35 euros for example. Any other amount is also welcome, of course." In the BASE condition, no contributions were suggested. To minimize costs, the SUGGEST condition was implemented among alumni with surnames beginning with an 'A' to 'K' and the BASE condition was implemented among alumni with surnames beginning with 'L' to 'Z'. This non-random allocation of conditions may have suppressed experimental effects, because alumni with surnames similar to the name of the University (U and T) are more likely to donate (Bekkers, 2009). Though name letter effects can sometimes be sizeable and highly significant, their total impact is limited by the number of similarities between surnames and targets. In our case, only two relatively infrequent initials are involved. Surnames 'T…' and 'U…' constitute only 2.8% and 0.4% of all alumni in the database. In any case, analyses below are conducted with and without alumni with surnames 'u' and 't' to remove the potential bias.

<u>Procedure</u>

Participants received a letter from the University Fund (UFonds) asking for contributions funding the Utrecht Excellence Scholarship (UES) programme. The letter explained that the goal of the programme was to allow excellent foreign students to study at Utrecht University without having to pay high tuition fees. It was also mentioned that Utrecht University has allocated funds for 50 scholarships per year, but that many more excellent students can be attracted by offering more scholarships. The ambassador of the program called for financial contributions to fund

more scholarships. After this call, the reference contribution manipulation was inserted. The letter concluded by saying that contributions are an 'investment in the society of the future'. Letters were signed by the ambassador of the program. At the bottom of the letter, a picture was shown of a 22 year old exchange student from India who received a scholarship, saying that 'One day I would like to develop a cure against cancer' and mentioning a website where alumni could read a blog from this student.

Participants

The experiment was conducted among 6,672 alumni of Utrecht University of whom valid names and addresses were included in the donor database. All participants had donated money to Utrecht University on prior occasions. This campaign, however, was the second general fundraising campaign ever conducted by the University. Previous contributions were primarily annual membership fees and voluntary donations to general funds of the University Foundation. Appeals were mailed on April 2, 2008. Both conditions were implemented in 3,336 letters. Amounts donated through May 31, 2008 are included in the analysis below.[1]

Results

It was expected that donations would be higher in the SUGGEST condition than in the BASE condition, but that the effect would be limited due to the absence of explicit information about the average behaviour of others. Table 2 supports these hypotheses.

---

[1] It should be noted that several donations were received after this date. One of these amounts far exceeded the amounts analyzed here. This amount would probably be an influential outlier.

Response rates were similar in the two groups, but the total amount donated was 10% higher in the experimental group. Though the differences between absolute amounts donated were not significant, the log-transformed amount donated among donors was higher in the SUGGEST condition than in the BASE condition.

Table 2. Proportion donating and amounts donated to Utrecht University Fund

	BASE	SUGGEST	Test statistic	Significance
Response	8.0%	8.2%	χ^2=.050	p<.863
Total contributions	€ 8353.00	€ 9197.00		
Mean amount donated among donors	€31.05	€34.45	F=2.404	p<.122
Mean amount donated among all	€ 2.50	€ 2.76	F=0.816	p<.366
Minimum donation	€ 2.00	€ 5.00		
Maximum donation	€ 200.00	€ 350.00		
Natural log of amount donated	3.21	3.37	F=7.972	p<.005
Modal contribution	€ 25	€ 35		

A second hypothesis in this experiment was that the reference contribution (€35) would be more popular in the SUGGEST condition than in the BASE condition. This was indeed the case. While the modal contribution was € 25 in the BASE condition (donated by 26.8% of all donors), the reference amount of € 35 was the modal contribution in the SUGGEST condition (donated by 38.6% of all donors). Figure 2 shows the distribution of contributions in the two conditions. The figure shows that the reference contribution was more popular in the suggest condition to the

detriment of mainly lower amounts, starting at € 10. In BASE, 13.4% of all donors gave € 10; in SUGGEST this proportion declined to 8.6%. Also € 15, € 20, € 25 and € 30 were less popular in BASE than in suggest. However, the reference contribution of € 35 also made € 50 less popular in SUGGEST (11.6%) than in BASE (21.2%).

Figure 2. Distribution of donations to Utrecht University Fund
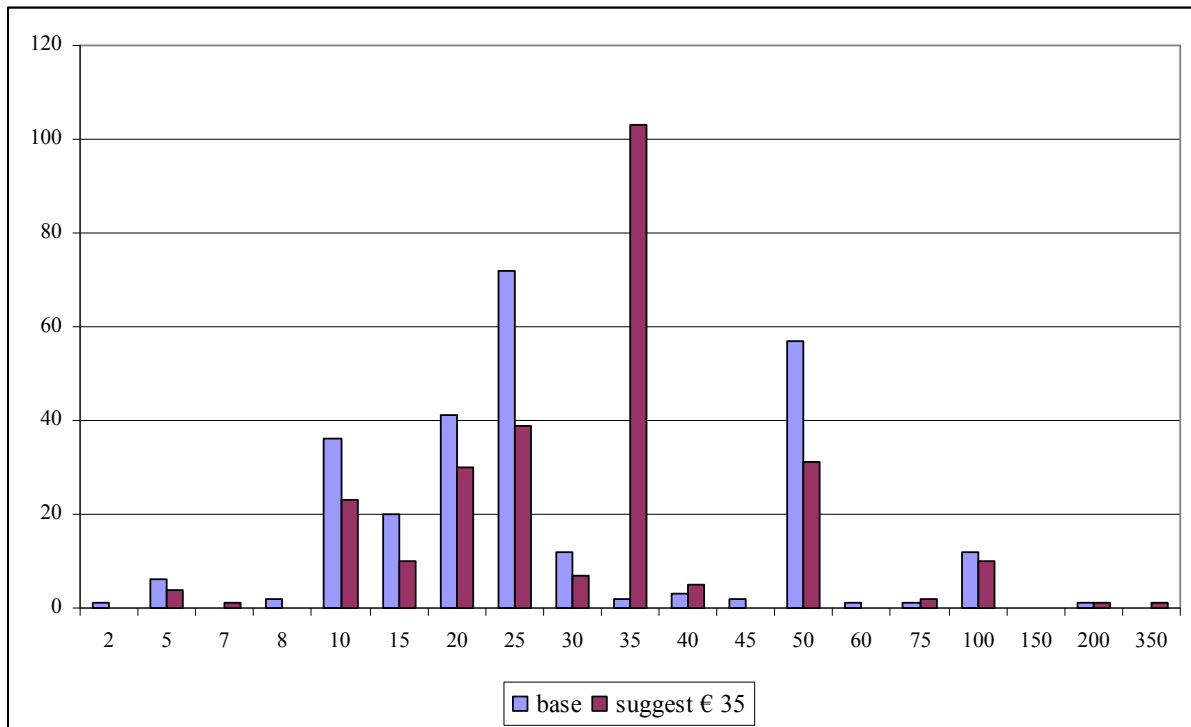
Now I examine whether the 'name letter effect' of similarity of alumni surnames beginning with 'U' and 'T' to Utrecht University (Bekkers, 2009) suppressed the effects of the reference contribution. Remember that the suggest condition was implemented among alumni with surnames beginning with letters 'L' to 'Z'. As in a previous campaign, alumni with surnames 'U…' were much more likely to donate (21.6%) than alumni with other surnames. Alumni with 'T…' surnames, however, were somewhat less likely to donate (5.1%) than alumni with other

14

surnames. Also, alumni with surnames 'U...' and 'T...' donated somewhat lower amounts than alumni with other surnames (€25.88 vs. €32.97). Excluding the 'U/T..' surnames, the results reported in table 2 hardly change. Response rates are still 8.0% and 8.2% in the base and suggest conditions, respectively (Chi Square = .062, df=1, p<.804); amounts donated are €31.40 and €34.45 (F=1.833, p<.176) and log transformed amounts donated are 3.22 and 3.37 (F=6.958, p<.009).

Discussion

The results of the present experiment clearly show that providing a reference contribution changes the distribution of amounts donated: contributions shift to the reference point. In the design of fundraising campaigns, reference points should be carefully chosen relative to prior levels of giving. In the current experiment, the total amount donated increased because the reference point was chosen above the typical contribution, and there were not many donors who gave more than the reference contribution. The distribution of donations suggests that conformity was a stronger motive for donor behaviour than prestige. The number of donations exceeding the reference contribution in the SUGGEST condition is lower than in the BASE condition, indicating that few donors tried to 'outgive' the reference amount.

The impact of the reference contribution may have been limited by the lack of explicit social information. In the SUGGEST condition, the letter merely stated that that the organisation 'would be helped' by the reference contribution. The information provided did not mention a typical contribution by other donors. Including more explicit social information may be a viable strategy to implement in situations in which donors are uncertain about the appropriate donation amount. Social information may also function as a signal of trustworthiness to donors.

Study 2: Social information on participation rates and amounts donated

The argument that the effect of the reference contribution on donations by university alumni is due to their uncertainty about the appropriate level of giving could not be tested experimentally in study 1. Therefore study 2 included a direct manipulation of social information to reduce uncertainty about the behaviour of others. In addition, this study serves to test the hypothesis that nominal social information is more strongly affecting donor behaviour than information about the amount donated by others. Respondents in the third wave of the Giving in the Netherlands Panel Survey (GINPS06) decided about the donation of their reward for participation (€10) to a selection of four charities. Respondents were given information about donation behaviour of respondents in a previous study. Two types of information were provided in a 2x2 design: the proportion of respondents making a donation (low versus high), and the average amount donated (low versus high). It was expected that social information on the proportion of others making donations would increase giving, but not the information on the amount donated.

Participants

All 1,474 respondents in the third wave of the Giving in the Netherlands Panel Survey (2006) participated in the experiment.

Design

In the base condition (n=288), no social information was provided. Four social information conditions were implemented in an incomplete 2 (high vs. low proportion of other donors) x 2 (typical contribution yes vs. no) x 2 (high vs. low total amount contributed) design (see table 3). All four social information conditions started with the sentence 'Perhaps you are curious to learn

16

what others do with the reward for filling out the survey.' In the HIGH-HALF condition,

participants were told that 'In the previous survey, **57%** of the participants gave away all or

some of their earnings to a charitable cause. The participants most often donated **half** of their

earnings' (boldface in original). In the HIGH-NUMBER condition, the latter sentence was replaced

by the sentence 'Taken together, the participants gave **29%** of all earnings to charitable causes.'

The LOW-HALF condition was identical to the high-half condition but replaced 57% by 35%. In

the LOW-NUMBER condition participants learned that **35%** of the participants donated at least

some of their earnings, amounting to **15%** of all earnings. The figures mentioned in the four

conditions were actual results in a previous experiment that manipulated the price of giving

(Bekkers, 2005).

Table 3. Experimental design of social information experiment in GINPS06

	HIGH	LOW
HALF	57% donated	35% donated
	Most people gave half	Most people gave half
NUMBER	57% donated	35% donated
	Contributions totalled 29%	Contributions totalled 15%
	of earnings	of earnings

Procedure

The current experiment is based on the All-or-Nothing Dictator Game (Bekkers, 2007a). After

the participants had completed the GINPS06 questionnaire, they were asked what they would

like to do with the reward for participation, and could choose between a voucher and a number of

charities. Three features distinguish the current experiment from the ANDG (Bekkers, 2007a): (1) participants could donate any desired proportion of their earnings; (2) participants could choose between four rather than three charities; (3) in the four social information conditions, social information was provided. The four selected charitable causes were the Cancer Foundation (KWF Kankerbestrijding), the Dutch Heart Organisation (de Nederlandse Hartstichting), Doctors Without Borders, and the Aids Fund. The experiment was conducted in the second and third week of May 2006.

Results

Table 4 shows the level of giving in the five conditions in the experiment.

Table 4. Social information effects on donations (GINPS06)

	Donated	Donation/earnings (donors only)	Donation/earnings
BASE	27.8 a	46.1 ab	12.8 a
HIGH-HALF	39.6 b	51.8 a	20.5 bc
HIGH-NUMBER	34.4 ab	49.0 ab	16.8 bc
LOW-HALF	37.6 b	46.9 ab	17.7 bc
LOW-NUMBER	36.9 b	44.7 ab	16.5 b
Test statistic	χ^2=10.508	F=1.350	F=2.960
Df	4	4	4
p	<.033	.250	.019

Note: Cells in the same columns with different subscripts differ significantly from each other at $p < .10$

Across conditions, 35.2% of the participants donated at least some of their earnings to one of the charitable causes. Donations most often benefited the Cancer research foundation (KWF Kankerbestrijding, 64.9%), followed by the Dutch Heart Organisation (16.2%), Doctors Without Borders (14.3%), and the Aids Fund (4.6%).

Social information increased the proportion of participants donating at least some share of their reward. Strikingly, *all* social information conditions increased the proportion of donors, but there were few differences among the social information conditions. There was no significant difference in the proportion of donors, nor the amount donated, between the condition in which participants heard that the proportion of other participants donating was high (i.e., 57%) or low (i.e., 35%). A logistic regression analysis of donations on whether or not social information was provided, the level of social information (low vs. high), the suggestion that most people give 'half' and the interaction between a high level of social information and the suggestion most people give 'half' yielded only one significant effect, for social information (with an odds ratio of 1.52, p<.018). Thus the results do not support H2 that nominal information on the proportion of donors has a stronger effect on donor behaviour than information about amounts donated.

Another striking finding was that the proportion of donors giving exactly or approximately half was *not* higher when participants heard that the typical amount donated was half of the earnings (see table 5).

In fact, in the HIGH-HALF condition, the modal contribution, made by 18.8% of all donors, was to give away 100% of the earnings. This is striking, because the modal contribution in the BASE condition was to give exactly half. Also in the HIGH-NUMBER condition the modal contribution was 100% of the earnings: 15.5% of all donors gave away their earnings completely in this condition. In the LOW-HALF and LOW-NUMBER conditions, participants were less likely to

donate their earnings completely (8.8% and 7.8%, respectively). In these conditions, the modal contribution was exactly half of the earnings.

Table 5. Social information effects on distribution of donations among donors (GINPS06)

	Donated ~half (%)	Donated half (%)	Donated all (%)
BASE	37.5 a	20.0 a	11.2 a
HIGH-HALF	33.9 a	9.8 a	18.8 ab
HIGH-NUMBER	35.5 a	13.6 a	15.5 ab
LOW-HALF	39.2 a	15.7 a	8.8 a
LOW-NUMBER	37.4 a	13.9 a	7.8 a
Test statistic	$\chi^2=0.766$	$\chi^2=4.177$	$\chi^2=8.535$
Df	4	4	4
P	<.943	<.383	<.074

Note: Cells in the same columns with different subscripts differ significantly from each other at *p* < .10

Discussion

When informed that other participants had donated in an earlier situation that is similar to the current one, participants were more likely to donate. The proportion of others donating did not affect the likelihood to donate. However, when informed that a relatively high number of other participants had donated, participants became more likely to give away their earnings to completely. These findings support the *participation hypothesis* and suggest that both conformity and prestige explain social information effects on giving behaviour.

Study 3: Social information, expectations, and giving

This study was conducted to test the hypothesis that expectations about the behaviour of others mediate social information effects. This hypothesis has been offered in previous studies on social information effects on giving and cooperation in social dilemmas (Frey & Meier, 2004; Ellers & Van der Pool, 2010). However, a shortcoming of many previous studies that include expectations about the behaviour of others is the low validity of the measurement of expectations. Studies that measure expectations about the behaviour of others after the participants have made their own choices are subject to the criticism that justification effects are at work. Participants could be motivated to report that they expect others to be like themselves in an effort to justify their own behaviour. An obvious improvement would be to randomize the order in which decisions are made and expectations about the behaviour of others are elicited. Due to a justification effect, a stronger correlation is expected between own giving behaviour and the giving behaviour expected from others when expectations are elicited after own decisions than when expectations are elicited before own donation decisions. This hypothesis was tested in the current study.

In addition, several hypotheses are tested on moderators of social information effects, including gender.

Participants

All 1,765 respondents in the fifth wave of the Giving in the Netherlands Panel Survey (2010) participated in the experiment. Participants decided about the donation of their reward for participation (on average €6.67) to a the same selection of four charities as in study 2.

<u>Design</u>

Participants were randomly placed in six conditions in a 2 (social information: none vs. positive) x 3 (elicitation of expectations: no expectations vs. before vs. after behaviour) design (see table 6). The no social information – no elicitation of expectations condition served as the base condition (n=308).

Table 6. Experimental design of social information experiment in GINPS10

	No EXPECTATIONS	BEFORE BEHAVIOUR	AFTER BEHAVIOUR
NO SOCIAL INFORMATION	308	277	289
SOCIAL INFORMATION	318	279	294

All three SOCIAL INFORMATION conditions included the sentence 'Perhaps you are curious to learn what others do with the reward for filling out the survey. In the previous survey, 40% of the participants gave away all or some of their earnings to a charitable cause.' This figure was the level of giving observed in the HIGH-HALF condition in study 2. Participants placed in the NO EXPECTATIONS condition did not estimate the proportion of other participants in the survey who would donate all or some of their earnings to a charitable cause. Participants placed in the BEFORE BEHAVIOUR condition estimated the proportion of other participants in the survey who would donate all or some of their earnings before they did so themselves. Participants placed in the AFTER BEHAVIOUR condition, in contrast, first decided whether which proportion of the earnings they donated and then estimated the proportion of other participants in the survey who would donate all or some of their earnings.

Results

Across conditions, 21.2% of the participants donated at least some of their earnings to one of the charitable causes.[2] Donations most often benefited the Cancer research foundation (KWF Kankerbestrijding, 68.7%), followed by the Dutch Heart Organisation (20.1%), the Red Cross (7.2%), and the Aids Fund (4.0%).

The results reported in the first column of Table 7 shows that only one social information condition increased the proportion of participants donating at least some portion of their reward: the SOCIAL INFORMATION – BEFORE BEHAVIOUR condition. In this condition about 30% of the participants donated at least some portion of their reward; an increase of one half from the baseline condition in which about 20% donated. The proportion of participants donating at least some portion of their reward was also significantly lower in the SOCIAL INFORMATION – AFTER BEHAVIOUR condition (18%). None of the other conditions yielded higher proportions of donating participants than in the base line condition (not even at $p < .10$).

The results in the third column show that the level of generosity among donors (the proportion of the reward donated) was lowest in the NO SOCIAL INFORMATION – BEFORE BEHAVIOUR condition. Intermediate levels of generosity were observed among donors in the SOCIAL INFORMATION – BEFORE and the NO SOCIAL INFORMATION – AFTER condition. The highest levels of generosity were observed among donors in the baseline condition, the NO SOCIAL INFORMATION – NO EXPECTATION condition and the SOCIAL INFORMATION – AFTER condition.

---

[2] A variety of factors may explain why the level of giving in this study is lower than in study 2, including period effects (lower generosity as a result of the economic crisis), changes in the selection of charities offered to participants (the Red Cross replaced Doctors Without Borders), and the modifications in the design of the experiment.

Table 7. Social information effects on donations and expectations (GINPS10)

	Donated	Donation/ earnings (donors only)	Donation/ earnings	Expectations
BASE	19.5 a	47.4 a	9.2 a	-----
INFO-NO EXPECTATIONS	19.2 a	48.8 a	9.4 a	-----
NO INFO-BEFORE	21.7 a	35.6 b	7.7 a	32.1 a
INFO-BEFORE	29.7 b	42.3 c	12.6 b	37.7 b
NO INFO-AFTER	19.7 a	43.4 c	8.6 a	42.4 c
INFO-AFTER	18.0 a	49.3 ac	8.9 a	40.2 bc
Test statistic	χ^2=15.716	F=2.157	F=1.590	F=12.310
Df	5	5	5	5
p	.008	.058	.160	.000

Note: Cells in the same columns with different subscripts differ significantly from each other at $p < .10$

Interestingly, the level of generosity expected from other participants in the survey was higher than the observed level of generosity displayed by the participants. This finding seems at odds with the 'better than average effect' and 'holier than thou effect' reported in previous research (Epley & Dunning, 2000; Muehleman et al., 1976; Pronin, Lin, & Ross, 2002). However, it is consistent with previous findings from surveys on giving in the Netherlands (Bekkers & Wiepking, 2011c). Participants who read that 40% of the participants in the previous survey had donated expected a similar level of giving in the current situation. Participants who received no social information expected a lower level of giving when their expectations were

elicited before they made their own choices (32.1%) than when their expectations were elicited after they had made their own choices (42.4%).

Table 8 shows that social information effects can be very different from one group to another. First of all the effect of social information was significantly less positive among participants reporting that they do not know 'what other people are giving'. Conversely, participants who are aware of giving by others (family, friends) are more sensitive to social information. While one could argue social information about donations is more informative about the social norm for participants who are not aware of the level of giving by others, the finding here shows that if 'naive' participants receive social information they do not imitate this information. One interpretation of this finding is that awareness of the level of giving by others reflects a preference for conformity: those who are not interested in conforming to the social norm on giving do not search for information about the behaviour of others.

The results give some support for the *perceived social norm hypothesis*. The effect of social information tends to be more positive among participants who agree more strongly with a scale constructed from responses to four statements reflecting positive social norms on giving.[3] While the interaction of social information with perceived social norms is not significant in table 8, it is significant in a model excluding the other interactions is 1.387 (p<.045).

---

[3] The statements were: 'In my environment it is self-evident to do volunteer work', 'Everybody should volunteer at least once in a lifetime', 'It is my opinion that everybody should donate to charities', 'People around me think it is self-evident to donate money to charity'. The responses to these statements (on a 1 – disagree completely – to 5 – agree completely – scale) all correlated positively with each other (*r*s ranging from .360 to .540) and formed a reliable scale with a Cronbach's α coefficient of reliability of .774. The scale score was the average of the responses to the four statements.

Social information effects tend to be stronger among participants with more positive expectations about the proportion of the Dutch population making donations throughout the calendar year.[4] While it is difficult to establish directly how the social information provided to participants ('40% gives some or all of the reward') was evaluated by the participants, one interpretation of this finding is that participants who expected a higher level of engagement in philanthropy among the population at large felt that the social information received in the experiment is confirming their expectations ('social proof').

The results also show some group differences in sensitivity to social information. Social information effects tend to be stronger among females than among males. While the interaction of social information with gender is not strongly significant, it is positive.[5] This result stands in contrast to results obtained by Croson, Handy & Shang (2010) in samples of public radio donors and students in the US. While the discrepancy is hard to explain, it is a reminder that gender differences in sensitivity to social information observed in one context may well be different from those in another context. The interaction of social information with low education is positive but not significant ($p<..128$). This finding suggests that experiments among convenience samples of students tend to underestimate the influence of social information.

Interaction effects of social information with giving 1% and with giving 2% are not significant (1.059 and 1.277, $p<.887$ and $p<.634$, respectively).

---

[4] The interaction of social information with generalized expectations in a model without the other interactions is 1.011 ($p<.042$).

[5] In a model without the other interactions the interaction is 1.573 ($p<.062$).

Table 8. Regression analyses of donations and expectations (GINPS10)

	Donated	Donation/ earnings	Expectations
SOCIAL INFORMATION	+0.266	+.463	.210
NO EXPECTATIONS	Ref.	Ref.	---------
EXPECTATIONS BEFORE	1.239	+-.149	Ref.
EXPECTATIONS AFTER	0.855	.096	***.259
INFO − AFTER	0.852	.040	***-.176
INFO − BEFORE	+1.730	.041	Ref.
INFO*FEMALE	+1.512	-.086	.028
INFO*LOW EDUCATION	1.484	-.025	.009
INFO*GENERAL EXPECTATIONS	+1.009	-.217	-.029
INFO*GIVES 1% OF INCOME	0.924	*.245	-.017
INFO*GIVES 2% OF INCOME	1.243	+-.183	.020
INFO*DON'T KNOW OTHERS' GIVING	*0.576	-.137	-.032
INFO*SOCIAL NORM	1.274	-.119	-.038
χ^2 / F	*84.075	*2.208	*3.069
N	1,765	372	1,128
(Pseudo) R Square	.073	.102	.057

Entries are odds ratios (column 1) and standardized beta coefficients (columns 2 and 3). Regression models also include controls for age, gender, religious affiliation, church attendance, education, income, home ownership, generalized trust, altruistic values, number of solicitations in past two weeks, general expectations, giving 1% of income, giving 2% of income, awareness of others' giving, and perceived social norms (coefficients not shown).

*** $p<.001$; ** $p<.01$; * $p<.05$; + $p<.10$

The results from the experiment support the hypothesis that expectations about the giving behaviour of other participants are more strongly related to own giving behaviour when expectations are elicited after the participants made their own choices. The correlation between the proportion of the other participants expected to donate some or all of their reward and the amount donated by the participants is .331. The correlation between expected and own donations is only .171 when expectations were elicited before the participants made their own choices. An OLS regression analysis of expectations shows that the difference is significant. The (standardized) β coefficient for the amount donated in the regression is .344 (p<.000); for elicitation of expectations β = .116 (p<.000) and for the interaction between the amount donated and elicitation of expectations after own donation decisions were made β = -.133 (.001).

Further evidence for a justification effect is found when the effects of expectations on donations are compared among participants in the EXPECTATIONS BEFORE and EXPECTATIONS AFTER conditions (see table 9). Expectations have a stronger pronounced relationship with giving some or all of the reward when they are measured after donation decisions were made (column 1). There is no difference however in the relationship with amounts donated among donors (column 2). The results in the final column show that expectations were more positive when they were elicited after donation decisions were made, but this tendency was much more pronounced among donors than among non-donors. Social information made expectations less positive when donations were made first.

Table 9. Regression analysis of donations on social information and expectations (GINPS10)

	Donated	Donation/ earnings	Expectations
		(donors only)	
SMALL CAPS SOCIAL INFORMATION	1.183	.072	***.129
EXPECTATIONS BEFORE	0.730	***-.289	
EXPECTATIONS AFTER	***0.170	.059	***.141
INFO – AFTER	0.915	.039	***-.151
EXPECTATIONS*EXPECTATIONS AFTER	***1.045	.185	------
EXPECTATIONS *EXPECTATIONS BEFORE	***1.019	.165	------
DONOR*EXPECTATIONS AFTER	------	------	***.239
$\chi 2$ / F	*105.647	*2.056	***34.596
N	1,765	373	1138
(Pseudo) R Square	.090	.024	.106

Entries are odds ratios (column 1) and standardized beta coefficients (columns 2 and 3).

*** p<.001; ** p<.01; * p<.05; + p<.10

Study 4: Peer effects on high-level giving

While study 1, 2 and 3 show that positive social information effects can be created in experimental situations, the question is whether actual giving behaviour is also shaped in part by social influence. The approach I take to measure social influence in this study is to identify the geographical units in which households are located and then to examine to what extent donations in the same geographical units are correlated. This approach has been used before in analyses of data from the Giving in the Netherlands Panel Survey (Bekkers, 2007b) and data on giving to United Way campaigns (Carman, 2006). The results of these previous analyses showed that indeed donations by individuals located in the same geographical unit are linked to each other. The influence of the context was not very strong in the GINPS analysis, but Carman (2006) found stronger peer effects in her analysis of donations to United Way among employees of a large bank. One of the differences between the Carman study and the other studies is that the employees studied are known to interact because they work in the same teams.

It would be best to measure peer effects by mapping the actual social networks of individuals and to study the links between the donations of these individuals. This is not a feasible strategy at the moment for lack of data on social networks. Therefore I assume that the network relevant for peer effects on giving is shaped by the physical place of residence of citizens. This is a reasonable assumption because social networks in the Netherlands are indeed based on proximity (Mollenhorst, Völker & Flap, 2008). Also the local environment creates collective action problems that need to be addressed by nonprofit organisations. Churches, for instance, are facing fundraising challenges that are locally determined. The geographical boundaries of parishes in the Catholic Church and religious communities in other (e.g., Protestant) churches often coincide with the boundaries of municipalities. Using the municipality

as the level of aggregation obviously obscures many peer effects that are originating at a smaller geographical unit (e.g., neighborhoods) or through a different social structure (e.g., friendship networks that cross municipal boundaries). The advantage of using the municipality as the level of aggregation, however, is that changes in the level of generosity in the municipality are more strongly exogenous. The composition of friendship networks is much more open to choice than the composition of the municipality. Individuals may move out of municipalities that do not fit their preferred level of generosity, but this is much less likely than avoiding contact with people who are less (or more) generous than desired.

To examine peer effects in charitable giving, I use data from the 2000-2005 waves of the Income Panel Study (IPS), a sample of 0.61% of all tax payers in the Netherlands. In total, 1,024,490 tax returns from 218,151 individuals are available for analysis. The large number of observations facilitates getting reliable estimates of peer effects.

The IPS contains all information provided by taxpayers to the tax authorities in their income tax returns. The data can be accessed only by special permission, and all output based on the data is screened before release of output files to researchers. Using a scrambled person ID code, the IPS data were matched to the official population register.

In their income tax forms, tax payers in the Netherlands can claim a deduction for gifts to nonprofit organisations. While more than 90% of the population in the Netherlands donates to nonprofit organisations in any given year (Schuyt, Gouwenberg & Bekkers, 2009), only 4% to 6% claims a deduction for donations (Bekkers & Mariani, 2009). This discrepancy is mostly due to a threshold for deductions. The threshold is 1% of gross income. Although the threshold can be circumvented by writing a legal contract saying that donations will be made at a certain level for a period of at least five years, not many tax payers know about this possibility. As a result the

donations by most of the tax payers who use the charitable deduction exceed 1% of income. This implies that the donations analyzed in this paper do not represent all donations to nonprofit organisations in the Netherlands. The conclusions in this study pertain to the class of 'larger' donations.

The model I estimate is

$$\Delta\, y_{it0\text{-}t\text{-}1} = \beta\, x_{it\text{-}1} + \gamma\, \Delta x_{it0\text{-}t\text{-}1} + \varphi\, z_{it0} + \theta_i + \varepsilon_{it} \tag{1}$$

In this equation y_{it} represents the donations by individual i at time t; x represents peer effects, z is a vector of control variables; θ_i is the error that does not change over time, and ε_{it} represents time specific errors. Note that the dependent variable is the change in donations in the past year (t_0) relative to the year before ($t_{\text{-}1}$). I examine donations y measured with four different variables. (1) the amount in € taxpayers claim as a charitable deduction. Observations that had missing values on this variable were considered as households that did not use the deduction and received a zero. (2) the natural log of (1) plus 1 (to avoid taking the log of zero); (3) whether or not the respondent claimed the charitable deduction for donations exceeding the threshold of 1% of income (a dichotomous variable also called 'incidence'); (4) the natural logarithm of the amount deducted among tax payers who claimed the deduction (henceforth called 'donors').

To measure peer effects, I use two types of variables, called *static and dynamic peer effects*. First, I include data on donations by tax payers living in the same municipality in the income tax of the previous year. I call these effects (lagged) *static peer effects*. In equation (1) they are represented by the parameter β, assuming that tax payers first get to know the *level of giving* in their municipality and then change their giving in the year thereafter. The vector of

static peer effects includes two variables: (a) the proportion of the tax payers in the municipality claiming the deduction and (b) the average amount donated among donors in the municipality.

A second type of peer effects is represented by data on changes in the generosity of peers. I call these *dynamic peer effects*. In equation (1) they are represented by the parameter γ, assuming that tax payers learn about *changes in the level of giving* in their municipality and adapt their giving to that of their peers. Dynamic peer generosity effects are also represented by two variables: the change in the proportion of tax payers in the municipality between the current year (t_0) and the year before (t_{-1}), and the change in the average amount donated in the municipality. The analysis including both static and dynamic peer effects shows to what extent donations change when donations among peers were higher in the year before and when they have changed in the past year.

In the present analysis, the popularity of the deduction fluctuated from 5.51% in 2000 through 4.75%, 4.99%, 5.05%, 5.31%, in 2001, 2002, 2003 and 2004 to 5.58% in 2005. The average amount deducted by donors also fluctuated, taking values of €1654, €1822, €893, €865, €899, and €914 in the years 2000 to 2005.[6] In the complete panel, 5.20% of tax payers deducted donations worth €1163 on average. A comparison with data from the Giving in the Netherlands Panel Survey on donations by households shows that that deducted donations represent a small group of large donors. In the entire Dutch population 90% of the households reports donations worth €301 per household making donations.

The proportion of donors and the amount donated are aggregated at the level of municipalities. In the Netherlands, municipalities vary in size. The observations are clustered at

---

[6] The high values in 2000 and 2001 are due to a small number of outliers. They were removed from the sample as explained below.

the level of municipalities. The tax payers in the dataset are located in 535 different

municipalities. The number of observations per municipality varies between 8 and 72,671. The

average number of observations per municipality is 408.

The vector of control variables z includes gender, ethnicity, age category, level of

urbanization, marital status, presence of children, home ownership, value of residence,

institutionalization, occupational group, receiving state benefits, gross income, sources of wealth,

and tax price. The controls are included because they are predictive of donations (Bekkers &

Wiepking, 2010b) and because peer generosity and the changes therein are likely to be correlated

with these variables. The controls are described in the appendix. Tax payers with a negative

gross income and missing values on income from wealth are excluded from the sample, lowering

the number of observations to 857,886. While interesting in their own right, the control variables

may be associated with donations in part through peer effects. I examine this possibility by

comparing the estimates for control variables from model (1) with the estimates from a model

excluding peer effects.

Initially the analyses were conducted using all observations from the panel. The results of

these analyses, however, turned out to be highly sensitive to observations in the top and bottom

percentiles of the distribution of peer generosity. Therefore I excluded the observations from

municipalities in the top and bottom percentiles from the sample. The analyses are based on the

observations from the remaining 98% municipalities.

Results

Table 10 shows the results of regression models of changes in individual donations on donations

by peers at t_{-1}, changes in donations by peers between the previous and current year (t_0-t_{-1}) and

controls, including fixed effects on individuals. The analysis includes both donors as well as non-donors (treated as zeros). The results support warm glow models of philanthropy. Increases in the proportion of donors in a municipality are strongly associated with increases in the amount donated one year later. A 1 percentage point increase in the proportion of donors is associated with a 7% increase in the amount donated. Note that the average proportion of donors is only 5.20%. A 1 percentage point increase represents a marginal increase of almost 20% of the average. In the analysis of absolute amounts donated in € (column 2), a 1 percentage point increase in the proportion of donors is associated with a €1105 increase in giving. This finding is consistent with warm glow models of giving.

Changes in the average amount donated in the municipality are not as strongly related to changes in the amount donated. A €1000 increase in the amount donated by peers is associated with an increase of 0.08% in the amount donated by tax payers. In the analysis of the absolute amounts this effect translates in a €43 increase. Lagged levels of peer generosity are also not strongly associated with amounts donated.

Table 11 presents results of separate analyses of the incidence (column 1) and the amount donated (column 2). It turns out that peer effects on the incidence are very different from peer effects on the amount donated. Changes in the incidence depend strongly on changes in the proportion of peers donating at least 1% of income. A 1 percentage point increase in the proportion of peers donating is associated with a 1.35 percentage point increase in the likelihood of using the deduction. Also a higher amount donated by peers is associated with a higher incidence one year after, but this relationship is very weak. When donations among peers are €1000 higher the incidence increases by only .0014 percentage point.

Table 10. Regression models of changes in individual donations on changes in donations by peers, donations by peers at t_{-1}, and controls, including fixed effects on individuals

	Δ log of amount donated among all tax payers $(t_0$-$t_{-1})$		Δ amount donated in € among all tax payers $(t_0$-$t_{-1})$	
	B	(SE) p	B	(SE) p
Dynamic peer effects				
Δ proportion in municipality using the deduction $(t_0$-$t_{-1})$	6.949	(.335)***	1104.510	(499.902)*
Δ average amount donated in municipality among donors $(t_0$-$t_{-1})$	[b].840	(.248)**	.043	(.004)***
Static peer effects				
L1. proportion in municipality using deduction (t_{-1})	.244	(.378)	75.102	(565.035)
L1. average amount donated in municipality among donors (t_{-1})	[a].431	(.305)	.012	(.005)**
Tax price				
Δ tax price $(t_0$-$t_{-1})$	-.345	(.024)***	-216.456	(36.249)***
Tax price (t_0)	.178	(.042)***	292.933	(63.057)***
Constant	-.273	(.356)	-384.770	(531.602)
Number of observations	644,702		644,702	
Number of individuals	172,947		172,947	

[a] Coefficient multiplied by 1,000,000; [b] Coefficient multiplied by 1,000; + p<.10; * p<.05; ** p<.01; *** p<.001

Changes in the amount donated, however, show very different dynamics. The results show that changes in the amount donated by peers are associated with changes in the individual amount donated. The magnitude of the relationship is moderate: a 10% increase in the amount donated by peers is associated with a 1.4% increase in the amount donated. Interestingly, the lagged peer generosity variable shows the opposite relationship: higher levels of peer generosity in one year are associated with lower amounts donated one year later. The magnitude of this effect is somewhat smaller than the dynamic peer generosity effect: when donations by peers are 10% higher, donations decrease by 1.0% one year later. The analysis of the amount donated also shows that a higher proportion of peers donating in one year is associated with a higher amount donated one year later. This effect is fairly strong, but it is surrounded by a large standard error. The table shows parameters for peer effects and tax price variables. The models also include controls for age, gender, ethnicity, age category, level of urbanization, marital status, presence of children, home ownership, value of residence, institutionalization, occupational group, receiving state benefits, gross income, and sources of wealth (parameters omitted to save space; full results appear in appendix).

The table shows parameters for peer effects and tax price variables. The models also include controls for age, gender, ethnicity, age category, level of urbanization, marital status, presence of children, home ownership, value of residence, institutionalization, occupational group, receiving state benefits, gross income, and sources of wealth (parameters omitted to save space; full results available upon request).

Table 11. Regression models of changes in individual donations on changes in donations by peers, donations by peers at t₋₁, and controls, including fixed effects on individuals

	Δ incidence $(t_0\text{-}t_{-1})$		Δ log of amount donated among donors $(t_0\text{-}t_{-1})$	
	B	(SE) p	B	(SE) p
Dynamic peer effects				
Δ proportion in municipality using the deduction $(t_0\text{-}t_{-1})$	1.351	(.057)***	-.548	(1.235)
Δ average amount donated in municipality among donors $(t_0\text{-}t_{-1})$	[a].023	(.042)	[b].136	(.013)***
Static peer effects				
L1. proportion in municipality using deduction (t_{-1})	.032	(.065)	3.450	(1.460)*
L1. average amount donated in municipality among donors (t_{-1})	[a].140	(.052)**	[b]-.102	(.015)***
Tax price				
Δ tax price $(t_0\text{-}t_{-1})$	-.034	(.004)***	-1.879	(.102)***
Tax price (t_0)	.029	(.007)***	.910	(.156)***
Constant	-.037	(.061)	-3.651	(.420)***
Number of observations	644,702		28,292	
Number of individuals	172,947		10,057	

[a] Coefficient multiplied by 1,000,000; [b] Coefficient multiplied by 1,000; + p<.10; * p<.05; ** p<.01; *** p<.001

The tax price effects are interesting as well, especially from a policy perspective. The charitable deduction has been put on the line by a commission reviewing the income tax (Review Commission Tax System, 2010). An analysis using the same data published by the tax authorities concluded that the incidence is not sensitive to the tax price and that hence the tax price effect on the amount donated need not be examined (Ministry of Finance, 2010). That analysis, however, used a discontinuity regression model that is not suitable to study tax price effects.

The results in table 11 show that changes in the tax price have a strongly negative effect on the amount donated and a much weaker negative effect on the incidence. If the tax price of giving increases by 10%, the amount donated decreases by 19% in the year after. The effect of a tax price increase of 10% on the incidence is only 0.3%. The dynamic tax price effects should be evaluated in conjunction with the static tax price effects, which are positive. Taken together, the price effect on the incidence of giving more than 1% of income is negligible and the price effect on the amount donated is -.87. This estimate falls well within the range of typical findings in the literature on price effects (Peloza & Steel, 2005).

Above I have analyzed changes in the incidence as one variable. However, changes in generosity may be positive or negative, and the determinants of the dynamics in donations may be different.

Table 12 shows parameters for peer effects and tax price variables on entry into and exit from the group of tax payers claiming a charitable deduction. The models also include controls for age, gender, ethnicity, age category, level of urbanization, marital status, presence of children, home ownership, value of residence, institutionalization, occupational group, receiving state benefits, gross income, and sources of wealth (parameters omitted to save space; full results available).

Table 12. Multiple regression models of entry and exit in using the deduction on donations by peers at t₋₁, changes in donations by peers and controls, including fixed effects on individuals

	Entry		Exit	
	B (SE) p		B (SE) p	
Dynamic peer effects				
Δ proportion in municipality using the deduction $(t_0\text{-}t_{-1})$	.834	(.038)***	-.517	(.035)***
Δ average amount donated in municipality among donors $(t_0\text{-}t_{-1})$	[a].012	(.028)	[a]-.011	(.026)
Static peer effects				
L1. proportion in municipality using deduction (t_{-1})	.139	(.043)***	.107	(.039)**
L1. average amount donated in municipality among donors (t_{-1})	[a].063	(.034)+	[a]-.077	(.032)***
Tax price				
Δ tax price $(t_0\text{-}t_{-1})$	-.007	(.003)***	.027	(.003)***
Tax price (t_0)	.010	(.004)***	-.019	(.004)***
Number of observations	644,702		644,702	
Number of individuals	172,947		172,947	

[a] Coefficient multiplied by 1,000,000; [b] Coefficient multiplied by 1,000; + p<.10; * p<.05; ** p<.01; *** p<.001

It has been argued that donations are habitual behaviour (Meier, 2008; Meer & Rosen, 2009). The argument is that once a donor is used to giving a certain amount to a certain organisation, this behaviour is fairly stable over time. The legal requirement to qualify for the periodic

donation – donating a fixed amount of money to a charitable organisation for a period of at least five years – also creates an incentive for stability. The results of the analyses presented above, however, are not in line with the argument that the amount donated is the result of a habit. Table 11 showed that changes in the amount donated are much more sensitive to tax price effects than changes in the incidence. When tax payer's donations increase above the threshold of 1% they are eligible for the deduction. A relatively small proportion of tax payers chooses to deduct donations, and this decision is not made in response to changes in the tax price but for other reasons. The results in table 11 show that peer effects are an important factor in the decision to deduct donations.

Another way of looking at habits in donations is by analyzing entry into and exit from the deduction separately, as in table 12. In the analysis above increases and decreases in generosity were analyzed jointly. However, the factors determining whether tax payers start to use the deduction may be different from those that determine whether tax payers stop using it. The results in table 12 show some interesting differences between entry and exit. Note that positive peer effects in the analysis of exit appear as having negative signs. The results of the analyses in table 12 show that changes in the proportion of peers using the deduction are more strongly related to entry than to exit. Also the lagged proportion of peers using the deduction is somewhat more strongly related to entry than to exit. The lagged amount donated by peers, however, is somewhat more strongly related to exit than to entry. Also the tax price effects on entry are smaller than on exit.

Taken together, the results suggest that decisions on increasing amounts donated to the tax deductible level of 1% of income are more sensitive to peer effects and less sensitive to tax price than decisions on successive decreases below the threshold.

A comparison of the effect sizes of the municipality level variables relative to individual level variables gives us an idea on the strength of peer effects. The tax price effects are by far the strongest individual level variables in the model. In the analysis of changes in the incidence of giving peer effects are much stronger than the price effects, also when both groups of variables are standardized. The effect of changes in the proportion of peers giving more than 1% of income in model 1 is almost 24 times its standard error, while the dynamic price effect is ten times its standard error. Peer effects are weaker in the analysis of changes in amounts donated. In that analysis the dynamic price effect is 18 times its standard error, while the dynamic peer generosity effect is about ten times its standard error and the lagged peer generosity effect is 7 times its standard error.

Table 13. Proportions of variance explained in models including fixed effects on municipalities

	1. Δ % using deduction $(t_0\text{-}t_{-1})$		2. Δ log of amount donated among donors $(t_0\text{-}t_{-1})$		3. Δ log of amount donated among all tax payers $(t_0\text{-}t_{-1})$	
	Including peer effects	Controls only	Including peer effects	Controls only	Including peer effects	Controls only
R^2 within	.0037	.0020	.0898	.0574	.0038	.0026
R^2 between	.0013	.0004	.0048	.0004	.0005	.0001
R^2 total	.0016	.0006	.0261	.0059	.0012	.0005

In order to more fully interpret the size of the peer effects, table 13 shows the proportion of variance explained in the models displayed in table 1 as well as the proportion of variance explained in models excluding peer effects. A comparison of these proportions shows the increase in the proportion of variance explained by the introduction of peer effects. The comparison shows that peer effects are sizeable. Including peer effects more than doubles the total proportion of variance explained.

Discussion

The results qualify the *participation hypothesis* that information on the proportion of others making donations is influencing donor behaviour, but not information about the amount donated. In this sample of tax payers, donations are sensitive to both the proportion and the amount donated by others, but the former influence is stronger than the latter.

The analyses presented above are by no means intended to be definitive estimates of peer effects (or tax price effects). Several important variables – notably education and religious affiliation – could not be included because they are not measured in the official population register that was matched to the tax records. The omission of education and religion biases the estimates for control variables. Several control variables are related to education (e.g., income) and religious affiliation (e.g., level of urbanization). Also peer effects may be biased due to the omission of education and religion variables. In the Netherlands, higher educated individuals are more likely to live in the larger cities that host universities, while religious persons are less likely to live there. Because education and religion are both associated with higher giving the net effect of omitting these variables may be near zero. The omission of education and religion is unlikely to have biased the tax price estimates. The tax price is not dependent on the level of education or

religious affiliation Also it is unlikely that changes in peer generosity are related to the individual level of education or religious affiliation. Although the tax records can be matched to surveys including education and income, this would substantially lower the number of observations.

A problem in the analyses presented is that it is not certain that the effects of the variables representing donations by peers actually measure social influence. As Manski (1993) noted, the changes in peer generosity may be the result of other changes that are not measured in the data. An option is to instrument the changes in peer donations with characteristics of peers (Carman, 2006). This strategy eliminates some of the problems in attributing the effects of peer generosity to social influence effects.

Another potential problem is selective mobility. If individuals base their decision to live in a specific municipality (indirectly) on the level of generosity, the causality in the observed relationship between peer and individual generosity may be the reverse from the direction assumed here. To counter this problem, a two way fixed effects regression model of changes in philanthropy is an option, including fixed effects not only on individuals but also on municipalities. This specification would be an even more stringent test as it takes selective mobilization into account.

General discussion

The evidence on social influence appears to contradict economic models of giving including altruism as a motive for philanthropic behaviour, which predict 'crowding out' effects (e.g., Andreoni, 1990). In these models the altruism motive is interpreted such that donors care about the well being of recipients, regardless of the source of the contribution that makes the recipients

better off. In this interpretation, donors should react negatively to changes in giving by others. If contributions by others increase, donors should reduce their own giving.

Social influence may be one reason why empirical studies hardly ever show substantial crowding out effects. In response to empirical rejections of complete crowding out, the impure altruism model has been proposed. This model includes a 'warm glow' parameter representing a private benefit that donors obtain by the act of giving. The model does not identify the source of the private benefit. But social influence may very well be part of the warm glow people obtain from giving. Giving is often viewed as socially desirable behaviour. If individuals act in line with social norms they will derive a positive selective benefit.

A speculative hypothesis is that giving at the high end of the distribution is more sensitive to social information than the regular type of small donations by the majority of the population. This would align with the effects of social information being more pronounced among high level donors in study 3. While the interactions with giving 1% and giving 2% were positive, they were not significant. Also it should be kept in mind that unobserved changes in determinants of giving at the municipality could have inflated the estimated peer effects.

A condition that is likely to enhance the effects of social information is similarity to the others whose behaviour is observed. People tend to like others who are similar to them, a regularity called the 'similarity-attraction hypothesis' (Byrne, 1971). People are more likely to feel normative pressure from similar others than from dissimilar others (Cialdini, 2007). In line with this hypothesis, Shang, Reed & Croson (2008) find that social information about another person of the same sex increased giving more strongly than social information about another donor of opposite sex. Future studies could test this hypothesis more extensively.

References

Alpizar, F., Carlsson, F., & Johansson-Stenman, O. (2007). 'Anonymity, reciprocity and conformity: Evidence from voluntary contributions to a natural park in Costa Rica'. *Journal of Public Economics, 92* (5-6), 1047-1060.

Andreoni, J. (1990). 'Impure altruism and donations to public goods: A theory of warm-glow giving'. *Economic Journal, 100*, 464-477.

Bekkers, R. (2007a). 'Measuring Altruistic Behavior in Surveys: The All-Or-Nothing Dictator Game'. *Survey Research Methods,* 1(3): 139-144.

Bekkers, R. (2007b). 'Social Context Effects on Giving'. Paper presented at the 36th Arnova conference, Atlanta, November 17, 2007.

Bekkers, R. (2009). Anonymity, Social Information and Giving. Paper presented at the 38th Arnova Conference, Cleveland, November 19-21, 2009.

Bekkers, R. (2010). Peer Effects in the Dynamics of Charitable Giving. Paper presented at the 39th Arnova Conference, Alexandria, November 18-20, 2010.

Bekkers, R. (2012). 'Regional Differences in Philanthropy'. In: *Routledge Companion to Philanthropy*, edited by J. Harrow, T. Jung & S. Phillips. Routledge.

Bekkers, R.,. & Boonstoppel, E. (2011). 'Geven door huishoudens'. Pp. 31-60 in: Schuyt, T.N.M., Gouwenberg, B.M. & Bekkers, R. (Eds.). *Geven in Nederland 2011: Giften, Sponsoring, Legaten en Vrijwilligerswerk.* Amsterdam: Reed Business.

Bekkers, R. & Wiepking, P. (2011a). 'A Literature Review of Empirical Studies of Philanthropy: Eight Mechanisms that Drive Charitable Giving'. *Nonprofit and Voluntary Sector Quarterly*, 40(5): 924-973.

Bekkers, R. & Wiepking, P. (2011b). 'Who Gives? A Literature Review of Predictors of

    Charitable Giving. Part One: Religion, Education, Age, and Socialisation'. *Voluntary*

    Sector Review, 2(3): 337-365.

Bekkers, R. & Wiepking, P. (2011c). 'Accuracy of Self-reports on Donations to Charitable

    Organisations'. *Quality & Quantity,* 45(6): 1369-1383.

Bekkers, R. (2012). 'Regional Differences in Philanthropy'. In: *Routledge Companion to*

    Philanthropy, edited by J. Harrow, T. Jung & S. Phillips. Routledge.

Breeze, B., Wilkinson, I., Schuyt, Th.N.M., Gouwenberg, B.M., (2011). *Giving in Evidence.*

    Fundraising from philanthropy for research funding in European universities. Brussels: EC.

    Directorate General Research.

Byrne, D. (1971). *The Attraction Paradigm*. Academic Press: New York.

Carman, K.G. (2006). 'Social Influences and the Private Provision of Public Goods: Evidence

    from Charitable Contributions in the Workplace'. Discussion Paper Stanford Institute for

    Economic Policy Research, Stanford University.

Cialdini, R.B. (2007). *Influence. The Psychology of Persuasion.* Collins Business.

Croson, R.T.A., Handy, F. & Shang, J. (2010). 'Gendered giving: the influence of social norms

    on the donation behaviour of men and women'. *International Journal of Nonprofit and*

    Voluntary Sector Marketing, 15: 199–213.

Croson, R. & Shang, J. (2008). 'The Impact of Downward Social Information on Contribution

    Decisions'. *Experimental Economics,* 11, 221–233.

Ellers, J. & Van der Pool, N. (2010). 'Altruistic behaviour and cooperation: the role of intrinsic

    expectation when reputational information is incomplete'. *Evolutionary Psychology*, 8

    (1): 37-48.

Epley, N., & Dunning, D. (2000). 'Feeling "Holier Than Thou": Are Self-Serving Assessments Produced by Errors in Self- or Social Prediction?' *Journal of Personality and Social Psychology*. 79, 861-875.

Frey, B.S. & Meier, S. (2004). 'Social comparisons and pro-social behaviour: testing "conditional cooperation" in a field experiment'. *American Economic Review,* 94, 1717–1722.

Holmes, J.G., Miller, D.T. & Ratner, R. (2002). 'Committing Altruism Under the Cloak of Self-Interest: The Exchange Fiction'. *Journal of Experimental Social Psychology,* 38: 144–151.

House of Lords (2011). *Behaviour Change*. HL Paper 179, Science and Technology Select Committee, 2nd Report of Session 2010-12. London: The Stationary Office Limited.

Manski, C.F. (1993). 'Identification of Endogenous Social Effects: The Reflection Problem'. *Review of Economic Studies*, 60: 531-542.

Martin, R., & Randall, J. (2008). How is donation behavior affected by the donations of others? *Journal of Economic Behavior & Organization*, *67*, 228–238.

Miller, D.T. (1999). 'The Norm of Self-Interest'. *American Psychologist*, 54(2): 1053-1060.

Miller, D. T., & Ratner, R. K. (1998). 'The disparity between the actual and assumed power of self-interest'. *Journal of Personality and Social Psychology, 74,* 53-62.

Muehleman, J., Bruker, C., & Ingram, C. (1976). 'The Generosity Shift'. *Journal of Personality and Social Psychology,* 34: 344-51.

Pronin, E., Lin, D. Y., & Ross, L. (2002). 'The bias blind spot: Perceptions of bias in self versus others'. *Personality and Social Psychology Bulletin, 28*, 369-381.

Shang, J. & Croson, R. (2008). 'A Field Experiment in Charitable Contribution: The Impact of Social Information on the Voluntary Provision of Public Goods'. *Economic Journal*, 119: 1422-1439.

Shang, J. Reed, A. & Croson, R. (2008). 'Identity Congruence Effects on Donations'. *Journal of Marketing Research*, 45: 351-361.

Servatka, M. (2009). 'Separating reputation, social influence, and identification effects in a dictator game'. *European Economic Review*, 53: 197-209.

Thaler, R.H. & Sunstein, C.R. (2008). *Nudge.* New Haven: Yale University Press.

Veblen, T. (1899). *The theory of the leisure class: An economic study of institutions*. New York: Macmillan.