ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Meier, Stephan; Stutzer, Alois

Working Paper

Is Volunteering Rewarding in Itself?

IZA Discussion Papers, No. 1045

Provided in Cooperation with:
IZA Network @ LISER, Luxembourg Institute of Socio-Economic Research (LISER)

Suggested Citation: Meier, Stephan; Stutzer, Alois (2004) : Is Volunteering Rewarding in Itself?, IZA Discussion Papers, No. 1045, Institute for the Study of Labor (IZA), Bonn

This Version is available at:
https://hdl.handle.net/10419/20280

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

DISCUSSION PAPER SERIES

IZA DP No. 1045

Is Volunteering Rewarding in Itself?

Stephan Meier
Alois Stutzer

March 2004

Forschungsinstitut
zur Zukunft der Arbeit
Institute for the Study
of Labor

Is Volunteering Rewarding in Itself?

Stephan Meier
University of Zurich

Alois Stutzer
University of Zurich and IZA Bonn

Discussion Paper No. 1045
March 2004

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0
Fax: +49-228-3894-180
Email: iza@iza.org

Any opinions expressed here are those of the author(s) and not those of the institute. Research disseminated by IZA may include views on policy, but the institute itself takes no institutional policy positions.

The Institute for the Study of Labor (IZA) in Bonn is a local and virtual international research center and a place of communication between science, politics and business. IZA is an independent nonprofit company supported by Deutsche Post World Net. The center is associated with the University of Bonn and offers a stimulating research environment through its research networks, research support, and visitors and doctoral programs. IZA engages in (i) original and internationally competitive research in all fields of labor economics, (ii) development of policy concepts, and (iii) dissemination of research results and concepts to the interested public.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available on the IZA website (www.iza.org) or directly from the author.

IZA Discussion Paper No. 1045
March 2004

ABSTRACT

Is Volunteering Rewarding in Itself?

Volunteering constitutes one of the most important pro-social activities. Following Adam Smith, helping others is the way to higher individual well-being. This view contrasts with the selfish utility maximizer who avoids costs from helping others. The two rival views are studied empirically. We find robust evidence that volunteers are more satisfied with their life than non-volunteers. Causality is addressed taking advantage of a natural experiment: the collapse of East Germany and its infrastructure of volunteering. People who accidentally lost their opportunities for volunteering are compared to people who experienced no change in their volunteer status.

JEL Classification: D64, I31, J22, Z13

Keywords: happiness, pro-social behavior, subjective well-being, volunteering

Corresponding author:

Alois Stutzer
Institute for Empirical Research in Economics
University of Zurich
Bluemlisalpstrasse 10
8006 Zurich
Switzerland
Tel.: +41 1 634 37 28/29
Fax: +41 1 634 49 07
Email: astutzer@iew.unizh.ch

Is Volunteering Rewarding in Itself?

"If you would like to be selfish, you should do it in a very intelligent way. The stupid way to be selfish is … seeking happiness for ourselves alone. … the intelligent way to be selfish is to work for the welfare of others."

The Dalai Lama

1 Two Views on Pro-Social Behavior and Happiness

The question about what ultimately causes people's happiness is found throughout the history of ideas. Greek philosophers were already debating how people can and should achieve happiness. Basically two views concerning the pursuit of happiness evolved. The first view emphasizes that helping others increases people's happiness. Referring to Aristotle, it is stated that true happiness is to be found in the expression of virtue. A happy person is therefore a moral person. In the era of Enlightenment, the father of modern economics, Adam Smith, also saw helping others as *the* way to higher well-being: "Concern for our own happiness recommends to us the virtue of prudence: concern for that of other people" (Smith, 1759: 385). The second view emphasizes that people who pursue their narrow self-interest become happy. A *homo oeconomicus*, who maximizes his or her utility by behaving selfishly, is expected to be happier than people who accept costs to help others. The hedonistic way to seek pleasure and happiness solely for oneself leads, according to this view, to higher subjective well-being.

In the end, the philosophical question, about whether sacrificing time and money to help others is rewarding and reflected in people's happiness, turns into an empirical question. To discriminate between the two rival views on pro-social behavior and happiness empirically, a measure of people's individual well-being is needed. We propose reported subjective well-being as a proxy measure. Based on extensive research by psychologists over the last decades (see Diener et al., 1999; Kahneman et al., 1999), the measurement of subjective well-being has made great progress. It is now possible to approximate utility and to fill it with psychological content by relying on questions about well-being in large scale representative surveys. In recent years, a major new development in economics takes advantage of these survey measures to test old hypotheses in a completely new way (see e.g. Frey and Stutzer, 2002a; 2002b).

We investigate empirically whether individuals who volunteer are more satisfied with their life. The paper concentrates on volunteer work because it constitutes one of the most important pro-social activities. In the United States, more than 50 percent of all adults do volunteer work, and this

constitutes an equivalent of 5 million full time jobs. In Europe, on average 32.1 percent of the population do volunteer work and this constitutes an equivalent of 4.5 million full time jobs (Anheier and Salamon, 1999: 58)[1]. A lot of charitable organizations crucially depend on the work provided by the large number of volunteers. Many community services only exist because people voluntarily offer their work free of charge.

This paper presents empirical evidence on the relationship between volunteering and life satisfaction, based on the German Socio-Economic Panel (GSOEP) for the period between 1985 and 1999. This large panel data set is one of the best data sets available for studying individual well-being in a longitudinal framework. Individuals are surveyed each year concerning various aspects of their life. In addition to questions about their socio-economic situation, participants are asked about their life satisfaction and the extent of volunteer work they do. Like in previous studies, we find in a raw correlation that volunteers are more likely to report high subjective well-being than non-volunteers. This result, however, does not establish causality. For example, it is very likely that unobserved personality characteristics like extraversion affect volunteering, as well as people's reports on their well-being. Moreover, reversed causality might be involved, i.e. satisfied people are more likely to volunteer. Such causality problems are pervasive in the earlier literature.[2]

Here, we directly address the issue of causality and take advantage of a natural experiment: the collapse of East Germany. Shortly after the fall of the Berlin Wall but before the German reunion, the first wave of data of the GSOEP was collected in East Germany. Volunteering was still widespread. Due to the shock of the reunion, a large portion of the infrastructure of volunteering (e.g. sports clubs associated with firms) collapsed and people randomly lost their opportunities for volunteering. Based on a comparison of the change in subjective well-being of these people and of people from the control group who had no change in their volunteer status, the hypothesis is supported that volunteering is rewarding in terms of higher life satisfaction. To our knowledge, this paper presents the first analysis that gets as close as possible to a test of the causal relation between the extent of volunteering and life satisfaction.

---

[1] European countries included in the study are Austria, Belgium, Finland, France, Germany, Ireland, The Netherlands, Sweden, Spain, and the UK. The data was collected in the years between 1995 and 1997.

[2] In the foreword to the special issue on volunteer work in *Law and Contemporary Problems,* Clotfelter (1999: 9) points out the problems of many previous studies: "Unfortunately, all of these empirical questions face a daunting methodological problem – the question of causality. If volunteers are found to have systematically different attitudes from those of non-volunteers, for example, it is by no means obvious that volunteering affects attitudes or vice versa. […] This is not to say that empirical analysis cannot uncover behavioral or attitudinal consequences of volunteering and public service participation, but only that care must be taken to distinguish correlation and causation."

In addition to the direct effect of volunteering on life satisfaction, results are reported that, conversely, a higher life satisfaction increases the willingness to volunteer. The relationship between volunteering and life satisfaction can therefore be seen as a self-enforcing process: volunteering increases subjective well-being, which in turn positively affects the willingness to volunteer.

The paper proceeds as follows. Section 2 discusses the theoretical consideration about why volunteering might influence well-being, as well as the results of previous research. In section 3, the empirical analysis is presented in four steps. First, together with the presentation of the data set, the raw correlation between volunteering and reported life satisfaction is established. Second, causality is tested with the analysis of the natural experiment. Third, the influence of people's life goals on the reward of volunteering is investigated. Fourth, the reverse causality that happy people are more likely to volunteer is analyzed. Section 4 offers a summary of the results and concluding remarks.

2 Happy Volunteers: Theoretical Considerations and Previous Research

Volunteering can positively affect individuals' well-being due to various motivational reasons. The different cannels can be roughly divided into two groups: (1) People's well-being increases because they enjoy helping others per se. The reward is internally due to an *intrinsic motivation* to care for others' welfare; (2) People volunteer instrumentally in order to receive a by-product of volunteer work. People do not enjoy volunteering per se but their utility increases because they receive an *extrinsic reward* from volunteering.

(1) *Intrinsic motivation*. Volunteers receive an internal reward as a direct result of their activity and/or from the outcome of the volunteer work they do. Because people enjoy helping others, no other (material) reward is necessary to motivate people. Three intrinsic rewards can be distinguished:

a. People *care about the recipient's utility*. Due to pro-social preferences, people's utility increases either if other people are better off as a result, or if inequality between persons diminishes (for a survey on theories, see Fehr and Schmidt, 2003). For example, a person who volunteers in an old people's home enjoys seeing that old people's welfare improves as a result of somebody caring for them. In a survey about the benefits of volunteering, 67 percent of the interviewed volunteers stated that an important source of satisfaction was seeing the results of their work (Argyle, 1999: 365). However, if seeing the outcome of volunteer work is the only reward, people should free-ride on the volunteering of others who

produce the public good (see e.g. Becker, 1974). Free-riders could enjoy the outcome of volunteering even more when the effort is provided by others.

b. Volunteers benefit from *intrinsic work enjoyment* (e.g. Deci, 1975; Frey, 1997). Independently of the outcome, people enjoy doing the required task per se. For example, people who volunteer for firefighting probably enjoy working in teams to fight fires with modern equipment. The task of volunteering may increase people's self-determination and feelings of competence because "[…] intrinsic motivation involves people freely engaging in activities that they find interesting, that provide novelty and optimal challenge" (Deci and Ryan, 2000: 235). In the end, self-determination and feelings of competence influence subjective well-being positively.

c. The act *of helping others gives enjoyment per se*. People receive a 'warm glow' (Andreoni, 1990) from contributing time to the provision of a public good. Independently of the outcome, the knowledge of contributing to a good cause is internally self-rewarding. This good feeling may, for example, be due to guilt reduction (Bierhoff, 2002).

(2) *Extrinsic reasons*. People may also receive utility from helping others because volunteering is extrinsically rewarding. Helping others is then secondary and direct positive feelings from helping others are absent. People volunteer 'instrumentally'; they see volunteering as an investment and expect external benefits or payoffs.

a. Volunteering can be undertaken as an *investment in human capital*. Individuals engage in volunteer activities to raise future earnings on the labor market (Menchik and Weisbrod, 1987). Especially if human capital depreciates due to illness, childbearing or being laid off, volunteering allows for the rebuilding or maintaining of employment skills. Women who have been out of the labor market while giving birth and raising children may, for example, use such a re-entry strategy (e.g. Schram and Dunsing, 1981). People may also volunteer because community service is often the prerequisite for a certain position in a private or a public firm. If volunteering is undertaken due to such extrinsic motivators, the correlation between volunteering and well-being would be due to expectations of higher earnings in the future.

b. People can volunteer in order to *invest in their social network*. Through engagement in volunteer work, social contacts evolve which can be valuable in establishing business contacts or for getting employment. The expected future (material) reward is responsible for the correlation between volunteering and well-being. Politicians may, for example, not only volunteer because they enjoy helping others, but also because they wish to signal their good

traits at the same time as hoping to make valuable social contacts for their political career. However, volunteers may also enjoy social interactions without the expectation of an extrinsic reward in the future. In this case, meeting people and making friends, which increase the feeling of relatedness, is not extrinsically but intrinsically rewarding.

The benefits from volunteering are probably for most people a combination of the aforementioned rewards. Previous research was not able to isolate the aspects of volunteering that are most rewarding. It is even still unclear whether volunteering is increasing people's level of well-being at all. Volunteering involves physical effort and has opportunity cost of time; instead of volunteering, people could use the time for market work or leisure activities. With regard to empirical findings, most of the evidence so far is suggestive but not conclusive: Volunteers are less prone to depression (Wilson and Musick, 1999), for elderly volunteers, a positive correlation between volunteering and life satisfaction is found (Wheeler et al., 1998), volunteers' physical health is stronger as they grow older (Stephan, 1991) and, ultimately, volunteers are found to have a lower risk of early mortality (Musick et al., 1999; Oman et al., 1999).[3] Most of the research on the benefits of volunteering, however, has two shortcomings. First, many studies ask participants of volunteer programs about the benefits of volunteering. The result that people indicate enjoyment as one of the benefits is not surprising, given that they have chosen it. Moreover, the result might be due to the fact that participants are more optimistic than average people or that they wish to justify their volunteer work. Second, most studies use cross-sectional data. Such an empirical strategy, of course, does not allow any conclusions whatsoever to be drawn about causality, because volunteers and non-volunteers may differ in many respects other than volunteer status.

Two empirical directions can be undertaken instead:

(1) The effect of pro-social behavior on subjective well-being can be investigated in the laboratory. Charness and Grosskopf (2001) and Konow and Earley (2002) are two related laboratory experimental studies. In the former study based on dictator games, no relation between well-being and pro-social behavior was found. The latter study only detected a relationship between long-term subjective well-being and generosity in a dictator game. The question of causality cannot be answered. In addition, whether pro-social behavior increases individuals' utility is difficult to measure in the laboratory because measures of overall well-being are explicitly designed not to be

[3] As volunteering is quite different from membership in voluntary associations, studies on the effect of membership on life satisfaction are not reported here.

sensitive to minor life events. The low stakes involved in a laboratory experiment should therefore not be expected to influence reported life satisfaction.[4]

(2) Field studies, using data better suited than in previous work, can inform about the effect of pro-social behavior and subjective well-being. More recent field studies use longitudinal survey data and investigate whether volunteering ten years ago has an influence on people's risk of mortality or depression scores today. The results support the view that volunteering is positively correlated with physical and mental health (for an overview, see Wilson and Musick, 1999). Thoits and Hewitt (2001) present a study which is similar to the analysis in this paper: they use the panel structure of two waves of a US survey to estimate whether volunteering has an influence on various measures of well-being like life satisfaction, self-esteem, health and depression. To test for selection effects, the authors control for past reported well-being. The results show, on the one hand, that volunteers report higher well-being than non-volunteers and, on the other hand, that past well-being is correlated with present volunteering. However, the study is unable to go any further and address the question of causality. The correlation could be spurious due to unobserved individual heterogeneity. Moreover, people's well-being may have increased between the two waves due to a third factor which simultaneously increased volunteering. Volunteering is, therefore, not causally responsible for an increase in well-being.

The empirical approach in this paper has at least two advantages over previous studies. First, we can rely on a large panel data set, including many more individual observations than analyzed in other studies and spanning a fourteen years' period, which includes eleven waves of the survey. This panel structure allows us to address important selection effects due to unobserved personal characteristics. Second, a natural experiment – the collapse of Eastern Germany – offers new possibilities for analyzing causality. An exogenous intervention randomly manipulated the extent of volunteering. Thus, the effect on well-being for people affected by the intervention compared with people not affected by the experiment can be investigated.

[4] A number of experimental studies interpret subjects' pro-social behavior as driven by a psychic reward. For example, Andreoni (1992) assumes that people receive a 'warm glow' feeling from pro-social behavior, which can partly explain their behavior. However, he does not try to measure this feeling directly.

3 Empirical Analysis

3.1 Data

For the analysis on whether volunteering increases people's well-being, large-scale survey data from the *German Socio-Economic Panel* (GSOEP) is used. [5] In the period between 1985 and 1999, around 22'000 different individuals were interviewed on various aspects of their socio-economic status and on their demographic characteristics. Moreover, the individuals were asked about their life satisfaction and the extent of their volunteer work. In the following section, the features of the questions about volunteering and life satisfaction are presented.

Volunteering is captured by the following question in the section on spare time activities: "Did you perform volunteer work?" Individuals can answer this question on a four-point scale (4 "weekly", 3 "monthly", 2 "less frequently" and 1 "never"). Figure 1 shows the distribution of frequency of volunteering based on the individuals surveyed in Germany between 1985 to 1999.[6]

[Figure 1 about here]

The distribution shows that around 28 percent of all men volunteer, whereas only 20 percent of all women volunteer.[7] In total, 23 percent of the German population volunteers in one form or another. These numbers on the extent of volunteering correspond to results from a study by Anheier and Salamon (1999). If the volunteers are divided into two groups, on the one hand you have people who volunteer frequently ("weekly" or "monthly") and on the other hand people who volunteer less frequently ("less frequently" or "never") 14 percent of the population do volunteer work frequently, whereas 86 percent do volunteer work less frequently or never.

Individuals' happiness or life satisfaction is measured with a single-item question on an eleven-point scale in the GSOEP: "How satisfied are you with your life, all things considered?" Responses range on a scale from 0 "completely dissatisfied" to 10 "completely satisfied". Contrary to some gloomy voices, a large proportion report high satisfaction with life. 4.78 percent even report to be completely satisfied with life (score=10) and about 44 percent report life satisfaction in the top three categories. However, there are about 5 percent at the bottom of the scale falling into the categories 0 to 3. On average, people's life satisfaction is at a level of 6.90 on the scale from 0 to

[5] For a detailed description of the GSOEP, see www.diw.de/soep/.

[6] The question on volunteering was included in eleven years but not in the years 1987, 1989, 1991 and 1993.

[7] Individual responses are weighted in order to get a representative distribution.

10. For a broader discussion on subjective well-being in general, and on measuring life satisfaction in the GSOEP, see Stutzer and Frey (2003).

For the research question on hand, the GSOEP has at least two definite advantages over other data sets:

(1) The GSOEP is a panel data set, where the same individuals are re-surveyed over time. The panel structure allows for the control of individual characteristics that do not change over time, but are systematically correlated with both reported subjective well-being and volunteering. For example, more outgoing personalities report, on average, higher satisfaction scores and they are at the same time more likely to volunteer. Without controlling for individual heterogeneity using fixed-effects models, a spurious correlation between volunteering and reported well-being could emerge. The systematic use of panel data is an important step towards more rigorous causal inference in research on subjective well-being. However, the panel structure alone does not solve the causality problem. The question of causality is tackled by analyzing a natural experiment.

(2) While answering the question about life satisfaction, volunteering is not salient in the GSOEP. In most other survey studies used in research on volunteering, the whole focus is on volunteer work and the benefits derived from it. It is a more powerful test of the rewards of volunteering if the benefits are reflected in a very general measure of subjective well-being, like the one used in the GSOEP.

3.2 Do Volunteers Report Higher Life Satisfaction?

Figure 2 presents the correlation between frequency of volunteering and life satisfaction for the pooled data set. The descriptive statistics show a sizable positive relationship between volunteering and life satisfaction. People who never volunteer report, on average, the lowest scores of life satisfaction. For each subsequent category, higher reported life satisfaction is measured. While people who never volunteer report an average life satisfaction of 6.93 points, people who volunteer weekly report an average life satisfaction of 7.35 points, i.e. 0.42 point higher. The difference is sizeable and statistically highly significant. Dividing people into two groups, people who volunteer weekly or monthly report, on average, to be satisfied with their life at a level of 7.30, whereas people who volunteer less frequently or never, report, on average, a score of only 6.95. The difference of 0.35 point is again statistically significant at the 99 percent level.

[Figure 2 about here]

The raw correlation between volunteering and life satisfaction scores does not take into account that a third factor (e.g. financial situation) may influence both the frequency of volunteering, as well as

reported subjective well-being. The positive correlation between volunteering and life satisfaction may therefore just reflect differences in the socio-economic status and in the demographic characteristics of people. To control for individual characteristics, we use a multivariate regression approach.

[Table 1 about here]

Table 1 presents in panel A the relationship between life satisfaction scores as the dependent variable and the frequency of volunteering as the independent variable, controlling for a number of socio-economic and demographic variables. The four dummy variables from "never volunteering" to "weekly volunteering" capture the frequency of volunteering. In the reference group are individuals who never volunteer. The estimation is based on an ordinary least squares model and the estimated robust standard errors are corrected for repeated observations at the individual level over time. [8] Panel A indicates that people who volunteer report a higher life satisfaction. Especially if people volunteer weekly or monthly, they report higher satisfaction scores. The differences are sizable and highly statistically significant. An individual who volunteers weekly reports, on average, a 0.30 points higher subjective well-being than somebody who never volunteers. People who volunteer monthly report, on average, a 0.27 points higher subjective well-being than the reference group. This result is consistent with the hypothesis that volunteering increases people's utility. The control variables in table 1 capture many potential differences between volunteers and non-volunteers, which could be responsible for the higher life satisfaction. The effects of the control variable are in line with results from other micro-econometric happiness functions for Germany (see e.g. Stutzer and Frey, 2003). The regression in panel A, however, does not control for unobserved time-invariant individual differences. For example, more outgoing personalities are more likely to volunteer and to report high subjective well-being. The panel structure of the GSOEP allows for the control of such spurious correlations due to unobserved individual heterogeneity by using a model with individual fixed-effects.

Panel B in table 1 reports the results of the ordinary least squares estimation with individual fixed-effects. Although the effects become smaller, an individual who volunteers weekly still reports, on average, a 0.08 point higher subjective well-being than an individual who never volunteers, controlling for unobservable individual heterogeneity. The difference is statistically significant at

[8] The model chosen implicitly assumes that life satisfaction scores can be cardinally interpreted. While the ranking information would require ordered probit or logit models, comparative analyses have shown that it makes virtually no difference whether responses are treated cardinally or ordinally in happiness functions (Hamermesh, 2001; Di Tella et al., 2001). However, ordinary least squares models are easier to interpret.

the 99 percent level. The effect remains robust if volunteering is measured with a dummy variable that equals 1 if an individual volunteers weekly or monthly and 0 if an individual volunteers less often or never. This variable probably best captures the important difference in the frequency of volunteering, whether people volunteer often and regularly or whether people very seldom or never volunteer. People who volunteer frequently report, on average, a 0.054 points higher life satisfaction ($p<0.002$).[9]

The question of causality, however, is still open. Whether volunteers report higher life satisfaction because helping others makes people happy or because people who become happier start volunteering cannot be answered based on the results of the fixed-effects estimations. To address the question of causality, a situation is analyzed where, due to an exogenous shock, people randomly lose the possibility of volunteering (i.e. a natural experiment; Meyer, 1995; Besley and Case, 2000). If they report, ceteris paribus, lower life satisfaction afterwards, the effect is more likely to be causal. If there is no change in subjective well-being, previous findings reflect to a large extent third factors and reverse causality.

3.3 German Reunion and the Abrupt Decline in Volunteering: A Natural Experiment

The German reunion constitutes an ideal natural experiment, which exogenously changed the situation for many volunteers in former East Germany. After the breakdown of East Germany, a large fraction of the infrastructure for volunteering collapsed. In East Germany, where volunteering was widespread, many opportunities were linked with the old structures, e.g. sports clubs were connected with nationally owned companies. Due to the reunion, these structures disappeared and many volunteers were 'forced' to stop volunteering. "With transformation, the infrastructure of volunteering lost its basis because community services in the GDR were to a large extent connected to publicly owned companies and institutions (schools etc.). Large companies especially, as the providers and supporters of an infrastructure of civic engagement (e.g. in sports), disappeared with the breakdown of the GDR-industry, which lost two thirds of its jobs" (Gensicke, 2000: 178; own translation).

[Figure 3 about here]

Figure 3 visualizes the volunteering situation in the new German "Laender" over time. After the collapse of the Berlin Wall in 1989, the GSOEP collected the first wave of data in East Germany in

[9] The full estimation is not presented here, but can be obtained from the authors on request.

1990, before the German reunion. The extent of volunteering was substantial: 29 percent of the respondents (see the scale on the left hand axis) indicated that they did volunteer work and almost 18 percent (see the scale on the right hand axis) indicated that they volunteer often ('weekly or monthly'). Due to the reunion, the frequency of volunteering dropped dramatically: in 1992, when people in the new German "Laender" were surveyed about their volunteer work for the second time, only about 10 percent of the respondents indicated that they do volunteer work weekly or monthly, a reduction of 8 percentage points. The collapse of the infrastructure randomly 'forced' many volunteers to stop helping others. In the years that followed, the amount of volunteer work gradually increased again, but in 1999 still had not reached the pre-reunion levels of volunteering. What has been the effect of this exogenous shock on the subjective well-being of volunteers?

After the reunion, average life satisfaction decreased in East Germany (Frijters et al., 2003). If volunteering influences well-being positively, the decrease of life satisfaction is expected to be larger for people who lost their opportunity for volunteering due to the collapse of the volunteer infrastructure. Figure 4 compares the life satisfaction of the same people in 1990 and in 1992, depending on their volunteer status. The life satisfaction of people who neither in 1990 nor in 1992 did volunteer work frequently (category = "never volunteer") decreases to almost the same extent as for people who volunteered frequently in 1990 and were still able to carry out volunteer work in 1992 ("always volunteer"). However, volunteers report higher well-being levels in both years. For people who started volunteering between 1990 and 1992, life satisfaction increases. However, we do not know why these people start volunteering and therefore the question of causality is open. Finally, the most important group: individuals who had to stop volunteering ("stop volunteer"). For them, life satisfaction decreases substantially. While the life satisfaction of people who did not change their volunteer status ("always volunteer" or "never volunteer") decreases by 0.53 points (s.e.= 0.004; N=2,839), the life satisfaction of people who had to stop volunteering decreases by 0.72 points (s.e.= 0.10; N=431). The difference of -0.19 points is statistically significant at the 90 percent level (t=1.699). The life satisfaction of people who volunteered frequently in 1990 drops from the high level experienced by those who volunteer down to the level that is reported by non-volunteers. This result supports the causal interpretation that volunteering positively affects life satisfaction.

[Figure 4 about here]

While we are convinced that we get close to causal inference in the simple difference-in-difference analysis, there are at least three possible objections to the interpretation of the findings:

(1) Other factors might affect both volunteer work and life satisfaction. For example, people who become unemployed are less likely to volunteer and at the same time report lower life satisfaction. In panel A of table 2, therefore, a multivariate regression is presented which includes individual fixed-effects and which controls for a number of socio-economic and demographic variables. Only people from East Germany are included, for whom the volunteer status and the life satisfaction scores for 1990 and 1992 are known. People who started volunteering after the reunion (category = "start volunteer") are excluded from the estimation because their inclusion would again make causality ambiguous. As only two years are included in the model, the negative coefficient of *time dummy 1992* indicates that life satisfaction was 0.27 points lower in 1992 than before reunion in 1990, but after the fall of the Berlin Wall in November 1989. Most importantly, the well-being of individuals who had to give up volunteering decreases even more controlling for observed and unobserved individual heterogeneity. The coefficient of the variable *weekly or monthly volunteering* is statistically significant at the 95 percent level. The magnitude is comparable to the descriptive statistics: people who lost their volunteer opportunities report a 0.23 points larger drop in life satisfaction than people who did not change their volunteer status. This result supports the causal interpretation that life satisfaction is influenced positively by volunteering and so refutes the first objection.

[Table 2 about here]

(2) An alternative interpretation of the loss in life satisfaction of people who were no longer in the group of volunteers in 1992 could throw doubt upon the reason put forward for the decline in volunteering: many individuals may not have been able to bear the insecurity that came with the breakdown of the communist GDR. These people may have retreated from society and become lethargic. As a result, they also stopped volunteering, but their lower well-being is actually caused by their retreat from society. There are, however, at least two counterarguments. First, it is known that many volunteers did not give up because they retreated from society but because the institution for which they used to volunteer disappeared after the reunion.[10] Second, in panel B of table 2, we include two other spare time activities (*socializing with friends* and *active sports*) as control variables. The dummy variables take the value 1 if people report that they socialize weekly or monthly (or took part in sports) and 0 otherwise. The results indicate that people report higher life

[10] The Enquete-Commission of the German Bundestag on the 'Future of Civic Activities' concludes in their report: "More than 37 percent of all the volunteers in the GDR stopped their volunteer work between 1989 and 1991. 50 percent reported that they stopped volunteering due to the termination of groups and organizations which previously provided opportunities for civic engagement, i.e. societal mass organizations or publicly owned firms" (Enquete-Kommission, 2002: 226; own translation).

satisfaction if they frequently socialize and take part in sports than if they are inactive with respect to these two spare time activities. If the 'retreat from society' interpretation were partly right, the inclusion of the two variables for spare time activities should lower the effect of volunteering. Although both variables, socializing and active sport, have the expected positive effect on life satisfaction, the effect of volunteering is not affected. Volunteering has a robust independent influence on life satisfaction.

(3) Another interpretation of the effect could speculate whether people who were engaged in voluntary work in the GDR were associated with the old political system. After the collapse of the GDR, not only did they lose their voluntary work, but they also primarily lost the connection with the regime. It can be hypothesized that this would have resulted in a loss of status and future perspectives. The empirical validity of this interpretation is analyzed taking the answer to a question in 1990 about satisfaction with the GDR into account. "The following questions deal with the situation in the GDR: All in all, how satisfied or dissatisfied are you with democracy as it exists in the GDR today?" People answered on a four-point scale (1=very satisfied, 2=satisfied, 3=dissatisfied, 4=very dissatisfied). An analysis is carried out to gauge whether the effect of volunteering on subjective well-being only applies to people who are more or less satisfied with the regime. The empirical analysis shows that the effect of stopping volunteering on life satisfaction is the same for people who are more or less satisfied with democracy in the GDR (-0.74 points) and for people who are more or less dissatisfied with the situation (-0.70 points). If different regressions for the sub-samples of which people are satisfied and which people are dissatisfied with the democracy in the GDR are run, the effect of volunteering is even higher for people who are more or less dissatisfied with the regime (see table A1 in the appendix). This result does not support the interpretation that people who were friendly to the regime lost the most from the fact that volunteering opportunities decreased with the reunion.

In sum, the breakdown of the GDR constitutes a unique natural experiment to analyze the causal effect of volunteering on people's utility. The results indicate that volunteering does increase happiness. The results are robust when controlling for other factors influencing life satisfaction, like unemployment status or other spare time activities.

How does this result fit into the picture that volunteering in the communist state of East Germany was not always purely voluntary? Imagine that engagement in some sort of community service was expected from a good citizen and a loyal party member. How can one explain that people who might have been 'forced' to volunteer become less happy when they do not have to volunteer anymore? Firstly, the extent of voluntary community services is probably underestimated. Besides the 'official' volunteering, many forms of voluntary community service were known (Gensicke,

2000). Secondly, the fact that people receive a psychic reward even if they were partly required by the system to volunteer is even stronger support for the hypothesis that helping others is rewarding. It could be interpreted that even people who volunteer instrumentally to get a certain job or achieve social recognition will profit from volunteering. This would contradict the conclusion that "[…] there can be little doubt that these benefits are usually unintended consequences of behavior that is motivated not by extrinsic but intrinsic rewards" (Wilson and Musick, 1999: 167). Much more research is needed to investigate under which conditions the benefits to the volunteers of volunteering are more or less pronounced. As a first step, the next section presents results on who is likely to profit the most from volunteering: people who pursue intrinsic life goals or people with extrinsic goals.

3.4 Who Benefits the Most from Volunteering?

People have different life goals. While some people are more extrinsically oriented ('materialists'), other people put more emphasis on intrinsic life goals. Materialists share the belief that acquisition and possession are central goals on the path to happiness (e.g. Tatzel, 2002 for a discussion in economics). In contrast, people with intrinsic life goals emphasize personal growth, relationships and community spirit as important sources of well-being. Naturally, the question arises whether one set of goals brings more life satisfaction. The research in psychology on this question concludes that 'All Goals Are Not Created Equal' (Ryan et al., 1996), meaning that people with more materialistic goals are less happy than people who pursue intrinsic life goals (see e.g. Kasser and Ryan, 2001). Applied to pro-social behavior, one could expect that such a 'hedonistic paradox' occurs because people who are materialistically oriented do not help others and therefore do not benefit from the internal rewards of pro-social behavior (Konow and Earley, 2002; Phelps, 2001). As a result, it is not people who pursue their own happiness who are happy but people who care for others.

These claims are tested in the GSOEP with a focus on volunteering. In two waves of the GSEOP, people were asked "How important for your well-being and satisfaction is …?" They rated inter alias the following areas: family, friends, income, and career success on a four-point scale. We define the first two areas as intrinsic and the last two as extrinsic. For each person in the sample, the relative importance of extrinsic over intrinsic life goals is calculated, assuming a cardinal scale. This variable is standardized around the mean, and a proxy for the importance of extrinsic goals is derived with a mean of 0 and a standard deviation of 1. The higher the value of the variable, the more weight is given to extrinsic goals. The analysis of the relation between life goals and the effect of volunteering on life satisfaction brings three interesting results:

(1) People who put more emphasis on extrinsic goals compared to intrinsic goals are less satisfied with life. If individuals are divided into two groups at the median, people who put above median importance on extrinsic aspects of life report, on average, a life satisfaction score of 6.8, while people below the median report a higher score of 7.2 points. The difference of 0.4 points is statistically significant at the 99 percent level. This result for Germany replicates the aforementioned results in psychology that people who pursue extrinsic goals are less satisfied with their life than people focusing on intrinsic life goals. Frey and Stutzer (2003) present one possible explanation for this result: more extrinsically oriented people may make larger mistakes when predicting future utility from various activities. They may focus too much on the extrinsic attributes of activities and put too much effort into gaining additional income and status, while underestimating intrinsic attributes of choice options. It follows that more extrinsically oriented people would devote too little time to helping others. The two following results are consistent with this interpretation.

(2) Volunteers on average do rate intrinsic goals as more important than extrinsic goals. People who volunteer weekly or monthly have an average score of –0.015, whereas people who volunteer less frequently or never have an average score of 0.002. The difference is statistically significant at the 95 percent level. Not surprisingly, intrinsically oriented people are more prepared to volunteer. However, also more extrinsically oriented people volunteer. But they may do so due to different reasons. These people may volunteer more instrumentally, i.e. in order to increase the probability of getting a good job or making a political career. For the intrinsic benefits gained from volunteering, such differences in motivations could be important, as indicated by the third result.

(3) People who are more extrinsically oriented benefit less from volunteering than people who put more importance on intrinsic life goals. In panel A of table 3, besides the dummy for volunteering weekly or monthly (=1) or less frequently or never (=0), a variable for the *relative importance of extrinsic goals* and an interaction between the dummy for *volunteering* and the *relative importance of extrinsic goals* is incorporated. The coefficient for the variable *relative importance of extrinsic goals* supports the first result in a multivariate regression: the more people are extrinsically oriented, the less satisfied they are with their life. The interaction term indicates that people who pursue more extrinsic goals benefit less from volunteering. As the variable for the relative importance of extrinsic goals is standardized around the mean, the interaction term indicates that people who are one standard deviation more extrinsically oriented benefit 0.08 points less from volunteering in terms of life satisfaction. The latter result is robust to a specification with individual fixed-effects, which controls for unobserved time-invariant differences between people (panel B of table 3). If separate estimations are run for the highest and the lowest quartile in terms of

importance of extrinsic goals, the result becomes even clearer. For the quartile of people who are the most intrinsically oriented, weekly or monthly volunteering increases their life satisfaction, on average, by 0.09 points (s.e.=0.036). For the quartile of people, who are the most extrinsically oriented, there is no statistically significant effect of volunteering on life satisfaction (coefficient= –0.02; s.e.=0.03).[11] It can therefore be concluded that intrinsically oriented people receive more benefits from volunteering than extrinsically oriented volunteers.

[Table 3 about here]

The differences presented in terms of benefits from volunteering between extrinsically and intrinsically oriented individuals can be interpreted as an indication that the motivation behind volunteering matters. People who volunteer out of intrinsic motivation receive a higher psychic reward from helping others than people who volunteer instrumentally. Alternatively, different characteristics of volunteer tasks may be responsible for the difference. More extrinsically oriented people may volunteer, for example, for a political organization, while intrinsically oriented people may volunteer in an old-people's home. More research is needed in order to better understand which volunteer tasks are most rewarding and how such differences can be explained.

3.5 Reverse Causality: Happiness Influences the Extent of Volunteering

The results in the sections above support the argument that volunteering causally increases well-being. However, the reverse causality that happier people are more willing to help others may still apply, as the two causal directions are not mutually contradictory. This section analyzes whether the relation between happiness and volunteering can in part be explained by this reverse causality.

The level of subjective well-being can influence the extent of volunteering in basically two respects.[12] Firstly, the state of happiness may lower the marginal effort costs to volunteer. Happiness therefore increases productivity and happy people exhibit better job performance. Secondly, happiness can increase the marginal benefits from volunteering. For example, according to theories of inequality aversion (Fehr and Schmidt, 1999): people who experience an above average utility (happiness) level try to reduce the inequality by helping others. The act of helping others may be all the more intrinsically rewarding, the better off you are in terms of happiness. A number of studies were able to observe a correlation between happiness and helping others (Thoits and Hewitt, 2001) or between happiness and ethical attitudes (James, 2003). In experimental

[11] The full results of the estimations are not presented here, but can be obtained from the authors on request.

[12] For a formal economic model on how mood, emotions or feelings might influence decision making, see Hermalin and Isen (2000). For a survey on empirical evidence for the influence of affect on decisions, see Isen (2000).

studies, the mood of people was manipulated by letting them find a coin or allowing them to win in a game. After a good mood had been induced, people were more likely to help others compared to a control group (Isen and Levin, 1972; Harris and Smith, 1975).

While there is evidence for the existence of a causal relation from experiments, as far as we are aware, there is only one study that addresses causality issues with field data (Thoits and Hewitt, 2001). Field data, however, are important to get an idea of the quantitative importance of effects. We therefore try to measure the effect of happiness on volunteering for the GSEOP. We also want to illustrate the methodological difficulties in this kind of analysis in which a summary measure of people's well-being is used as a regressor.

We start with a standard supply function of volunteer labor for Germany. The details of the supply function are shown in table A2 in the appendix. Results are in line with previous research (e.g. Menchik and Weisbrod, 1987; Freeman, 1997): Contrary to the predictions made by standard economic theory, volunteers have characteristics which are associated with a high estimation of time. Looking at the effects for the whole population, the following effects are worth mentioning: the probability of volunteering increases significantly according to household income, age and years of education. The probability is significantly lower for women, unemployed people, people living in former East Germany and for foreigners. Results for working time are inconclusive. In a next step, proxies for life satisfaction are introduced as independent variables into the supply function.

In panel A of table 4, reported life satisfaction (LS) scores are added to the supply function for volunteer work. The dependent variable of the probit model is a dichotomous variable, taking the value 1 if people volunteer weekly or monthly and 0 otherwise. As life satisfaction is reported on an *ordinal* eleven point scale, dummy variables for every category are incorporated. The reference group consists of people who report a life satisfaction score of five. The results are consistent with the notion that happier people are more likely to volunteer. People who report a higher life satisfaction than the reference group are statistically significantly more likely to volunteer, whereas people who report lower life satisfaction than the reference group are less likely to volunteer. For example, for people with the highest life satisfaction, the probability of volunteering is 4.5 percentage points higher than in the reference group. Conversely, individuals who report the lowest life satisfaction score are 4.5 percentage points less likely to volunteer than the reference group. In order to account for unobservable time-invariant individual factors, a conditional logit model with fixed effects is estimated. Panel B of table 4 shows that the basic finding is robust to this check. A test of joint significance of the dummies for life satisfaction shows that life satisfaction is statistically significantly correlated with the decision to contribute time to public goods

($\chi^2(10)=18.76$; $p<0.0434$). An increase in life satisfaction is associated with a higher probability to volunteer.

[Table 4 about here]

As we made a case for a causal effect of volunteering on life satisfaction in the first part of this paper, special attention should be given to the question of causality. For causal inference, variation in life satisfaction would have to be observed that is not associated with volunteering. This would ideally be a positive or negative life event, which increases (decreases) life satisfaction without an independent influence on volunteering. In table 5, a two stage least squares (2SLS) model is presented, using different life events which have positive or negative effects on life satisfaction as instruments to explain life satisfaction. The chosen life events (marriage, unemployment, divorce and death of spouse) affect life satisfaction before and after the event (Clark et al., 2003). The year before and after the event are used as additional factors to explain life satisfaction, i.e. as instrumental variables. The results of the 2SLS regression in table 5 indicate that part of the correlation between volunteering and life satisfaction can be explained by life satisfaction influencing volunteering.

[Table 5 about here]

However, the instrumental variable approach that we apply has various problems that are inherent in the attempt to find an instrument for life satisfaction. Life satisfaction is not sensitive to minor life events. This means that if an event is reflected in life satisfaction, it is most likely that this major life event also influences other areas of life (e.g. the extent of volunteering). It is therefore almost impossible to find a convincing instrument for life satisfaction. The above mentioned results that happiness influences helping others has, therefore, to be interpreted with much care.

4 Concluding Remarks

Helping others increases people's individual well-being. This result is derived from an analysis based on volunteer work and reported subjective well-being for a large panel data set for Germany. People who volunteer frequently are more likely to report high life satisfaction than non-volunteers. The reunion of Germany constitutes an ideal natural experiment to investigate the causality of the relationship between volunteering and happiness. Due to the big changes that took place in civil and firm infrastructure, many volunteers randomly lost their opportunities to be engaged in volunteer work. As a result, we observe that their well-being decreases compared to a control group for which

the volunteer status remains unchanged. The result is robust to the introduction of various control variables and to the control of time-invariant individual heterogeneity.

The basic result of this study, that volunteering is rewarding for the volunteers in terms of higher life satisfaction, has to be qualified in at least two respects. Firstly, people who place more importance on extrinsic life goals relative to intrinsic life goals benefit less from volunteering. This may be due to the fact that volunteering is not internally rewarding if people volunteer instrumentally in order to get a (material) reward like a better job. Another possibility is that more extrinsically oriented people are engaged in different volunteer tasks than intrinsically oriented people, whereby the benefits may depend on the task. Secondly, the results of this study support not only the notion that volunteering influences happiness but also that evidence is presented for the reverse causation: happy people are more likely to volunteer. The two causal directions are not mutually contradictory and can be interpreted as an indicator of a self-enforcing process. Volunteering increases happiness, which in turn increases the likelihood of volunteering.

The results presented in this paper point to two open questions for future research. Firstly, the question arises why do not more people volunteer in order to increase their life satisfaction. Many people seem to fail to increase their utility because they are not engaged in volunteering. One explanation could be based on the theory of people mispredicting future utility (Frey and Stutzer, 2003). People make mistakes in predicting utility from activities they experience in the future asymmetrically, i.e. they underestimate the benefits from intrinsic tasks like volunteering while they overestimate the value of e.g. additional income from overtime work. Future research could try to assess whether people really underestimate the internal reward from volunteering. Secondly, there is the question about policy conclusions. On the one hand, one might stick to the societal level and think about institutions that provide opportunities for volunteer work. On the other hand, there are many current endeavors from private actors and sometimes also from the state to foster volunteering: for example, a number of academic institutions and private and public enterprises take past community services as a prerequisite for admission to a certain college or for employment in higher positions. However, how do these external incentives affect the benefits volunteers get from volunteering? Is self-actualization still possible when volunteering becomes to some extent instrumental or do the incentives lead to a crowding out of intrinsic motivation (Frey, 1997)? The challenge is in being able to understand under which institutional conditions voluntary work remains rewarding in itself.

5 References

Andreoni, James (1990). Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving. *Economic Journal* 100(401). 464-77.

Andreoni, James (1992). Warm-Glow Versus Cold-Prickle: The Effects of Positive and Negative Framing in Cooperation in Experiments. *Quarterly Journal of Economics* 60(1). 1-21.

Anheier, Helmut K. and Lester M. Salamon (1999). Volunteering in Cross-National Perspective: Initial Comparisons. *Law and Contemporary Problems* 62(4). 43-65.

Argyle, Michael (1999). Causes and Correlates of Happiness. In: Kahneman, Daniel, Ed Diener and Norbert Schwarz (Eds.). *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation. 353-73.

Becker, Gary S. (1974). A Theory of Social Interactions. *Journal of Political Economy* 82(6). 1063-93.

Besley, Timothy and A. Case (2000). Unnatural Experiments? Estimating the Incidence of Endogeneous Policies. *Economic Journal* 110(467). 672-94.

Bierhoff, Hans-Werner (2002). *Prosocial Behaviour*. New York: Psychology Press.

Charness, Gary and Brit Grosskopf (2001). Relative Payoffs and Happiness: An Experimental Study. *Journal of Economic Behavior and Organization* 45(3). 301-28.

Clark, Andrew E., Ed Diener, Yannis Georgellis and Richard E. Lucas (2003). Lags and Leads in Life Satisfaction: A Test of the Baseline Hypothesis. Working Paper. CNRS and DELTA-Fédération Jourdan.

Clotfelter, Charles T. (1999). Why 'Amateurs'? *Law and Contemporary Problems* 62(4). 1-16.

Deci, Edward L. (1975). *Intrinsic Motivation*. New York: Plenum Press.

Deci, Edward L. and Richard M. Ryan (2000). The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry* 11(4). 227-68.

Di Tella, Rafael, Robert J. MacCulloch and Andrew J. Oswald (2001). Preferences over Inflation and Unemployment: Evidence from Surveys of Happiness. *American Economic Review* 91(1). 335-41.

Diener, Ed, Eunkook M. Suh, Richard E. Lucas and Heidi L. Smith (1999). Subjective Well-Being: Three Decades of Progress. *Psychological Bulletin* 125(2). 276-303.

Enquete-Kommission (2002). *Bericht - Bürgerschaftliches Engagement: auf dem Weg in eine zukunftsfähige Bürgergesellschaft*. Opladen: Leske + Budrich.

Fehr, Ernst and Klaus Schmidt (1999). A Theory of Fairness, Competition, and Cooperation. *Quarterly Journal of Economics* 114(3). 817-68.

Fehr, Ernst and Klaus M. Schmidt (2003). Theories of Fairness and Reciprocity - Evidence and Economic Applications. In: Dewatripont, Mathias, Lars P. Hansen and Stephen J. Turnovsky (Eds.). *Advances in Economics and Econometrics - 8th World Congress, Econometric Society Monographs*. Cambridge: Cambridge University Press. 208-57.

Freeman, Richard B. (1997). Working for Nothing. The Supply of Volunteer Labor. *Journal of Labor Economics* 15(1). 140-66.

Frey, Bruno S. (1997). *Not Just for The Money. An Economic Theory of Personal Motivation*. Cheltenham, UK and Brookfield, USA: Edward Elgar.

Frey, Bruno S. and Alois Stutzer (2002a). *Happiness and Economics: How the Economy and Institutions Affect Well-Being*. Princeton and Oxford: Princeton University Press.

Frey, Bruno S. and Alois Stutzer (2002b). What Can Economists Learn from Happiness Research? *Journal of Economic Literature* 40(2). 402-35.

Frey, Bruno S. and Alois Stutzer (2003). Economic Consequences of Mispredicting Utility. Mimeo. Institute for Empirical Research in Economics, University of Zurich.

Frijters, Paul, John P. Haisken-DeNew and Michael A. Shields (2003). Investigating the Patterns and Determinants of Life Satisfaction in Germany Following Reunification. *Journal of Human Resources.* forthcoming

Gensicke, Thomas (2000). Freiwilliges Engagement in den neuen Ländern. In: von Rosenbladt, Bernhard (Ed.). *Ergebnisse der Repräsentativerhebung 1999 zu Ehrenamt, Freiwilligenarbeit und bürgerschaftliches Engagement [Schriftenreihe des Bundesministeriums für Familie, Senioren, Frauen und Jugend]*. Stuttgart: Kohlhammer. 176-85.

Hamermesh, Daniel S. (2001). The Changing Distribution of Job Satisfaction. *Journal of Human Resources* 36(1). 1-30.

Harris, Mary B. and Robert J. Smith (1975). Mood and Helping. *The Journal of Psychology* 91(2). 215-21.

Hermalin, Benjamin E. and Alice M. Isen (2000). The Effect of Affect on Economic and Strategic Decision-Making. Mimeo. University of California at Berkeley.

Isen, Alice M. (2000). Positive Affect and Decision Making. In: Lewis, Michael and Jeannette M. Haviland (Eds.). *Handbook of Emotions*. New York: The Guilford Press. 417-35.

Isen, Alice M. and Paula F. Levin (1972). Effect of Feeling Good on Helping: Cookies and Kindness. *Journal of Personality and Social Psychology* 21(3). 384-88.

James, Harvey S. (2003). Are Happy People Ethical People? Evidence from North America and Europe. Mimeo. University of Missouri-Columbia.

Kahneman, Daniel, Ed Diener and Norbert Schwarz (Eds.) (1999). *Well-Being: The Foundations of Hedonic Psychology*. New York: Russell Sage Foundation.

Kasser, Tim and Richard M. Ryan (2001). Be Careful What You Wish For: Optimal Functioning and the Relative Attainment of Intrinsic and Extrinsic Goals. In: Schmuck, Peter and Kennon M. Sheldon (Eds.). *Life Goals and Well-Being. Towards a Positive Psychology of Human Striving*. Kirkland, WA: Hogrefe and Huber. 116-31.

Konow, James and Joseph Earley (2002). The Hedonistic Paradox: Is Homo Economicus Happier? Mimeo. Loyola Marymount University.

Menchik, Paul L. and Burton A. Weisbrod (1987). Volunteer Labor Supply. *Journal of Public Economics* 32(2). 159-83.

Meyer, Bruce D. (1995). Natural and Quasi-Experiments in Economics. *Journal of Business and Economic Statistics* 13(2). 151-62.

Musick, Marc A., A. Regula Herzog and James S. House (1999). Volunteering and Mortality Among Older Adults: Findings from a National Sample. *Journal of Gerontology* 54B(3). S173-S180.

Oman, Doug, Carl E. Thoresen and Kay McMahon (1999). Volunteerism and Mortality Among the Community-Dwelling Elderly. *Journal of Health Psychology* 4(3). 301-16.

Phelps, Charlotte D. (2001). A Clue to the Paradox of Happiness. *Journal of Economic Behavior and Organization* 45(3). 293-300.

Ryan, Richard M., Kennon M. Sheldon, Tim Kasser and Edward L. Deci (1996). All Goals Are Not Created Equal: An Organismic Perspective on the Nature of Goals and Their Regulation. In: Gollwitzer, Peter M. and John A. Bargh (Eds.). *The Psychology of Action: Linking Cognition and Motivation to Behavior*. New York and London: The Guilford Press. 7-26.

Schram, Vicki R. and Marilyn M. Dunsing (1981). Influences on married women's volunteer work participation. *Journal of Consumer Research* 7(4). 372-79.

Smith, Adam (1759 [2000]). *The Theory of Moral Sentiments*. Amherst, New York: Prometheus Books.

Stephan, Paula (1991). Relationships Among Market Work, Work Aspirations and Volunteering: the Case of Retired Women. *Nonprofit and Voluntary Sector Quarterly* 20(2). 225-36.

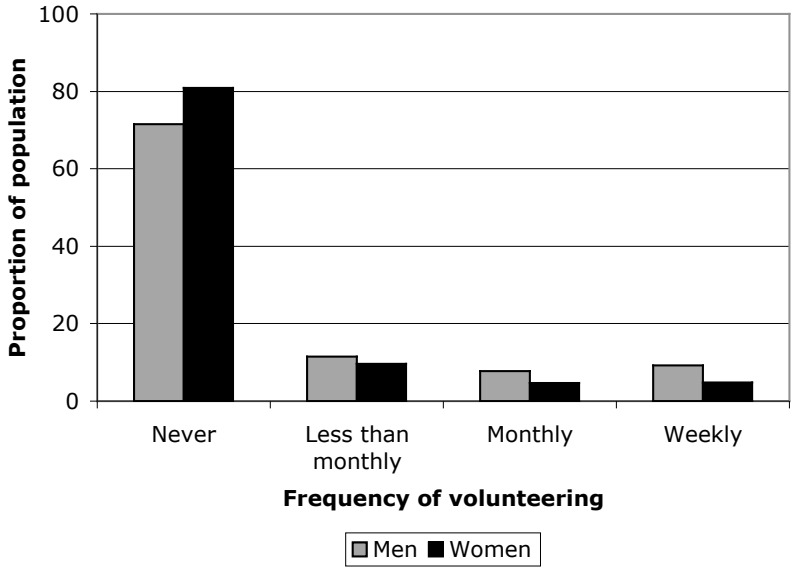
Stutzer, Alois, and Frey, Bruno S. (2003). Reported Subjective Well-Being: A Challenge for Economic Theory and Economic Policy. *Mimeo*. Institute for Empirical Research in Economics, University of Zurich.

Tatzel, Miriam (2002). "Money Worlds" and Well-Being: An Integration of Money Disposition, Materialism and Price-Related Behavior. *Journal of Economic Psychology* 23(1). 103-26.

Thoits, Peggy A. and Lyndi N. Hewitt (2001). Volunteer Work and Well-Being. *Journal of Health and Social Behavior* 42(2). 115-31.

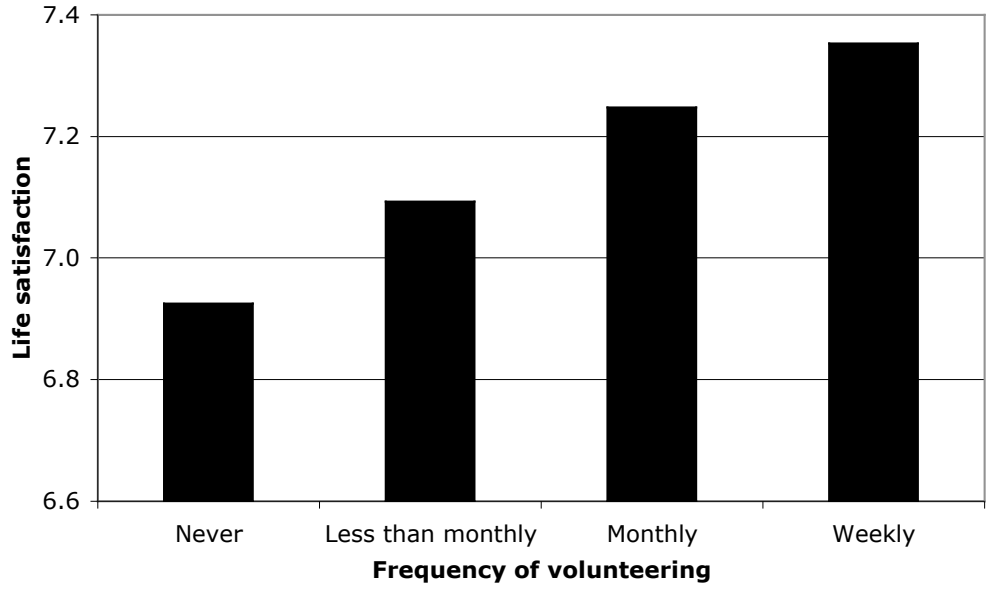
Wheeler, Judith A., Kevin M. Gorey and Bernard Greenblatt (1998). The Beneficial Effects of Volunteering for Older Volunteers and the People They Serve: A Meta-Analysis. *International Journal of Aging and Human Development* 47(1). 69-79.

Wilson, John and Marc Musick (1999). The Effects of Volunteering on the Volunteer. *Law and Contemporary Problems* 62(4). 141-68.



Notes: Weighted frequency based on 133'045 observations
Source: German Socio-Economic Panel.

Figure 1: Frequency of Volunteering in Germany, 1985-1999



Source: German Socio-Economic Panel.

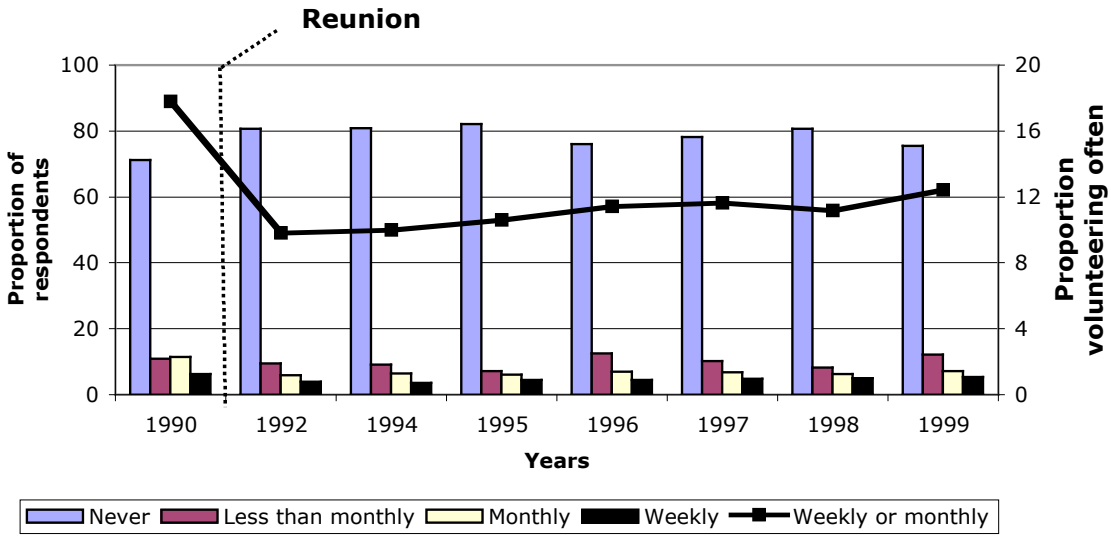
Figure 2: Volunteering and Life Satisfaction, Germany 1985-1999

Table 1: Life Satisfaction and Volunteering, Germany 1985-1999

Dependent variable: Satisfaction with life

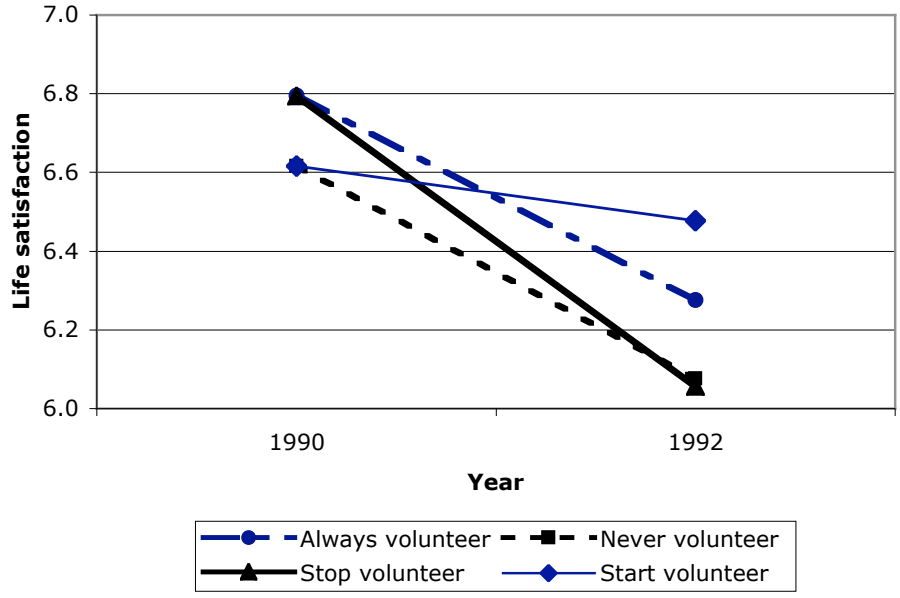
	Panel A		Panel B	
	Coef.	t-value	Coef.	t-value
Never volunteering	Reference group			
Less than monthly volunteering	0.080	4.08**	-0.016	-0.98
Monthly volunteering	0.266	9.86**	0.025	1.17
Weekly volunteering	0.298	10.13**	0.080	3.43**
Household income, ln	0.313	19.75**	0.190	16.16**
No. of household members$^{1/2}$	-0.281	-9.01**	-0.214	-8.18**
Male	Reference group			
Female	0.081	4.02**		
Age	-0.051	-12.35**		
Age^2/100	0.048	10.20**	-0.010	-2.28*
Years of education, ln	0.195	3.91**	-0.292	-3.35**
Single, no partner	Reference group			
Single, with partner	0.095	2.71**	0.196	6.05**
Married	0.267	7.77**	0.271	8.39**
Separated, with partner	-0.143	-1.09	0.088	0.95
Separated, no partner	-0.563	-7.50**	-0.259	-4.64**
Divorced, with partner	0.086	1.17	0.339	5.84**
Divorced, no partner	-0.382	-6.19**	-0.072	-1.39
Widowed, with partner	0.471	3.57**	0.485	4.08**
Widowed, no partner	-0.121	-1.95	-0.175	-3.22**
Spouse abroad	-0.259	-1.59	-0.057	-0.55
No children	Reference group			
Children	-0.013	-0.56	-0.004	-0.24
Employed	Reference group			
Self-employed	-0.249	-5.33**	-0.115	-3.03**
Part-time work	-0.185	-4.78**	-0.172	-5.85**
Not working	-0.161	-5.85**	-0.137	-6.81**
Unemployed	-1.011	-30.88**	-0.727	-33.30**
Military service	-0.320	-3.48**	-0.355	-4.76**
Maternity leave	0.073	1.38	-0.053	-1.19
In education	0.100	2.86**	0.031	0.95
Retired	-0.054	-1.12	-0.062	-1.83
Western Germany	Reference group			
Eastern Germany	-0.655	-27.27**	-0.353	-4.04**
Nationals	Reference group			
EU foreigners	0.146	3.85**		
Non-EU foreigners	-0.135	-4.05**		
Constant	7.088	47.37**	7.749	32.07**
Year dummies	Yes		Yes	
Individual fixed-effects	No		Yes	
No. of observations	125,468		125,468	
No. of individuals	22,016		22,016	
F-value	106.12**		91.11**	

Notes: Panel A presents an OLS regression with robust standard errors (clustered for individuals). Panel B presents an OLS regression with individual fixed-effects.
Significance levels: * 0.01<p<0.05, ** p<0.01.
Source: German Socio-Economic Panel.



Source: German Socio-Economic Panel.

Figure 3: Volunteering in East Germany Before and After the Reunion



Source: German Socio-Economic Panel.

Figure 4: Loss of Volunteer Work and the Decrease in Life Satisfaction, 1990/92

Table 2: Loss of Volunteer Work and Life Satisfaction, 1990/92

Dependent variable: Satisfaction with life

	Panel A		Panel B	
	Coef.	t-value	Coef.	t-value
Volunteering less than monthly	Reference group			
Volunteering weekly or monthly	0.226	2.02*	0.231	2.00*
Socializing with friends			0.149	2.13*
Active sports			0.141	1.62
$Age^2/100$	-0.089	-1.33	-0.098	-1.45
Years of education, ln	-1.034	-0.70	-1.243	-0.82
Single, no partner	Reference group			
Single, with partner	-0.290	-0.95	-0.326	-1.05
Married	0.359	0.86	0.427	1.01
Separated, with partner	-0.559	-0.67	-0.489	-0.59
Separated, no partner	0.453	0.58	0.553	0.70
Divorced, with partner	-0.030	-0.06	0.111	0.21
Divorced, no partner	-0.246	-0.42	-0.121	-0.21
Widowed, with partner	0.750	0.58	0.691	0.54
Widowed, no partner	-0.204	-0.38	-0.375	-0.68
No children	Reference group			
Children	-0.243	-1.51	-0.287	-1.75
Employed	Reference group			
Self-employed	-0.228	-0.86	-0.275	-1.01
Part-time work	-0.455	-2.01*	-0.437	-1.90
Not working	-0.227	-1.69	-0.234	-1.73
Unemployed	-0.659	-5.58**	-0.638	-5.30**
Military service	-0.866	-1.56	-0.839	-1.46
Maternity leave	-0.035	-0.16	-0.032	-0.15
In education	0.278	1.02	0.243	0.88
Retired	-0.164	-0.63	-0.134	-0.51
Constant	10.589	2.54	11.062	2.59**
Year dummy 1990	Reference group			
Year dummy 1992	-0.268	-2.17*	-0.23	-1.88
Individual fixed-effects	Yes		Yes	
No. of observations	6489		6387	
No. of individuals	3259		3257	
F-value	12.72**		11.29**	

Note: OLS models with individual fixed-effects.
Significance levels: * $0.01<p<0.05$, ** $p<0.01$.
Source: German Socio-Economic Panel.

Table 3: Intrinsic/extrinsic Life Goals and the Effect of Volunteering on Life Satisfaction

Dependent variable: Satisfaction with life

	Panel A		Panel B	
	Coef.	t-value	Coef.	t-value
Volunteering less than monthly	Reference Group			
Volunteering weekly or monthly (=1)	0.233	9.93**	0.037	2.07*
Relative importance of extrinsic goals compared to intrinsic goals	-0.130	-9.50**		
Volunteering* - relative importance of extrinsic goals compared to intrinsic goals	-0.078	-3.47**	-0.048	-2.52*
Household income, ln	0.406	20.48**	0.249	16.91**
No. of household members$^{1/2}$	-0.324	-9.33**	-0.263	-9.51**
Male	Reference group			
Female	0.025	1.14		
Age	-0.057	-12.16**		
Age^2/100	0.053	9.95**	-0.004	-0.86
Years of education, ln	0.142	2.60**	-0.282	-3.17**
Single, no partner	Reference group			
Single, with partner	0.085	2.32*	0.205	6.21**
Married	0.232	6.23**	0.258	7.83**
Separated, with partner	-0.067	-0.49	0.147	1.52
Separated, no partner	-0.513	-6.39**	-0.222	-3.84**
Divorced, with partner	0.090	1.17	0.349	5.89**
Divorced, no partner	-0.336	-5.11**	-0.078	-1.46
Widowed, with partner	0.462	3.06**	0.545	4.26**
Widowed, no partner	-0.146	-2.11*	-0.182	-3.20**
Spouse abroad	-0.342	-1.65	-0.035	-0.29
No children	Reference group			
Children	0.017	0.70	0.022	1.17
Employed	Reference group			
Self-employed	-0.239	-4.75**	-0.117	-3.02**
Part-time work	-0.222	-5.47**	-0.186	-6.14**
Not working	-0.206	-6.75**	-0.119	-5.64**
Unemployed	-0.979	-28.57**	-0.718	-31.88**
Military service	-0.286	-3.02**	-0.340	-4.39**
Maternity leave	0.055	1.03	-0.043	-0.96
In education	0.044	1.14	0.023	0.67
Retired	-0.126	-2.35*	-0.076	-2.12*
Western Germany	Reference group			
Eastern Germany	-0.613	-24.59**	-0.357	-4.12**
Nationals	Reference group			
EU foreigners	0.093	2.10*		
Non-EU foreigners	-0.161	-4.35**		
Constant	7.262	44.95**	7.489	30.18**
Year dummies	Yes		Yes	
Individual fixed-effects	No		Yes	
No. of observations	108,115		108,115	
No. of individuals	16,206		16,206	
F-value	108.20**		87.19**	

Notes: Panel A presents an OLS regression with robust standard errors (clustered for individuals). Panel B presents an OLS regression with individual fixed-effects.
Significance levels: * 0.01<p<0.05, ** p<0.01.
Source: German Socio-Economic Panel.

Table 4: Supply Functions for Volunteer Work and Life Satisfaction, Germany 1985-1999

Dependent variable: Volunteering monthly or weekly (=1), less frequently or never (=0)

	Panel A		Panel B	
	Marginal effects	z-value	Coefficient	z-value
LS Score 0	-0.045	-3.07**	-0.301	-1.25
LS Score 1	-0.044	-2.62**	-0.393	-1.53
LS Score 2	-0.015	-1.49	-0.285	-1.93
LS Score 3	-0.012	-1.62	-0.228	-2.21*
LS Score 4	-0.007	-1.17	-0.082	-0.92
LS Score 5	Reference group			
LS Score 6	0.013	2.99**	0.006	0.11
LS Score 7	0.021	4.99**	0.008	0.15
LS Score 8	0.039	8.81**	0.043	0.82
LS Score 9	0.052	9.14**	0.036	0.56
LS Score 10	0.045	6.46**	0.149	1.99*
Control variables	Yes		Yes	
Year dummies	Yes		Yes	
Individual fixed-effects	No		Yes	
No. of observations	125,468		36,811	
Log likelihood	-45738.129		-13561.119	

Notes: Panel A: probit regression with robust standard errors (clustered for individuals). Panel B: conditional logit model with personal fixed-effects. For control variables, see table A2 in the appendix.
Significance levels: * 0.01<p<0.05, ** p<0.01.
Source: German Socio-Economic Panel.

Table 5: Volunteering and Life Satisfaction, 2SLS Regression

Dependent variable: Volunteering monthly or weekly (=1), less frequently or never (=0)

	Coefficient	t- value
Life satisfaction	0.042	4.28**
Work time	-0.001	-1.88
Work time^2/100	0.000	1.25
Work time n.a.	-0.027	-2.08*
Household income, ln	-0.006	-1.35
No. of household members$^{1/2}$	0.054	8.32**
Male	Reference group	
Female	-0.071	-17.20**
Age	0.008	9.73**
Age^2/100	-0.0001	-9.00**
Years of education, ln	0.126	11.38**
Single, no partner	Reference group	
Single, with partner	-0.050	-6.98**
Married	-0.019	-2.67**
Separated, with partner	-0.062	-2.98**
Separated, no partner	0.007	0.49
Divorced, with partner	-0.067	-5.48**
Divorced, no partner	0.0002	0.02
Widowed, with partner	-0.082	-4.13**
Widowed, no partner	0.010	0.95
Spouse abroad	0.006	0.35
No children	Reference group	
Children	-0.004	-0.79
Employed	Reference group	
Self-employed	0.015	1.28
Part-time work	0.059	5.76**
Not working	-0.0002	-0.05
Unemployed	-0.0003	-0.43
Military service	-0.022	-1.29
Maternity leave	-0.046	-4.38**
In education	0.023	2.39*
Retired	-0.015	-1.40
West Germany	Reference group	
Eastern Germany	-0.023	-2.82**
Nationals	Reference group	
EU foreigners	-0.089	-14.21**
Non-EU foreigners	-0.089	-17.24**
Year dummies	Yes	
Constant	-0.611	-8.29**
No. of observations	125,468	
F-value	38.74**	

Notes: 2SLS regression with robust standard errors (clustered for individuals). First-stage regression: Life Satisfaction= 0.243(t-value=4.86) year after marriage 0.364(7.18) year before marriage – 0.107 (-2.51) first year unemployed – 0.476 (-13.06) year before unemployment - 0.088 (-1.20) year after divorce - 0.295 (3.75) year before divorce – 0.578 (-9.06) year after death of spouse – 0.308 (-4.13) year before death of spouse + all other control variables. Adj. R^2=8.18.

Significance levels: * 0.01<p<0.05, ** p<0.01.

Source: German Socio-Economic Panel.

Appendix

Table A1: Loss of Volunteer Work and its Effect on People Satisfied/Dissatisfied with the GDR

Dependent variable: Satisfaction with life

	Sample A; people *satisfied* with GDR		Sample B; people *dissatisfied* with GDR	
	Coefficient	t- value	Coefficient	t- value
Volunteering less than monthly	Reference group			
Volunteering weekly or monthly	0.148	0.86	0.275	1.86
$Age^2/100$	-0.185*	-2.03	0.032	0.33
Years of education, ln	-2.094	-1.02	0.142	0.07
Single, no partner	Reference group			
Single, with partner	-0.403	-0.84	-0.220	-0.54
Married	0.355	0.55	0.460	0.83
Separated, with partner	-0.850	-0.84	0.591	0.36
Separated, no partner	0.354	0.28	0.672	0.66
Divorced, with partner	-0.237	-0.27	-0.003	-0.00
Divorced, no partner	-0.007	-0.01	0.095	0.13
Widowed, with partner	No observation		0.533	0.39
Widowed, no partner	0.483	0.57	-0.664	-0.95
No children	Reference group			
Children	-0.143	-0.60	-0.291	-1.32
Employed	Reference group			
Self-employed	-0.749	-1.94	0.218	0.60
Part-time work	-0.383	-1.17	-0.483	-1.53
Not working	-0.283	-1.38	-0.239	-1.33
Unemployed	-0.315	-1.75	-0.900**	-5.73
Military service	-0.649	-0.89	-0.905	-1.08
Maternity leave	-0.030	-0.10	-0.057	-0.19
In education	-0.024	-0.07	0.622	1.56
Retired	-0.139	-0.40	-0.200	-0.52
Constant	15.740**	2.68	4.854	0.82
Year dummy 1990	Reference group			
Year dummy 1992	-0.214	-1.21	-0.378*	-2.16
Individual fixed-effects	Yes		Yes	
No. of observations	2768		3705	
No. of individuals	1391		1860	
F-value	7.52**		6.74**	

Notes: OLS models with individual fixed-effects. People in sample A are 'more or less satisfied with democracy as it exists in the GDR'. People in sample B are 'more or less dissatisfied with democracy as it exists in the GDR'.
Significance levels: * $0.01<p<0.05$, ** $p<0.01$.
Source: German Socio-Economic Panel.

Table A2: Supply Functions for Volunteer Work, Germany 1985-1999

Dependent variable: Volunteering monthly or weekly (=1), less frequently or never (=0)

	All		Men		Women	
	Marg. effect	z-value	Marg. effect	z-value	Marg. effect	z-value
Work time	-0.001	-1.40	0.002	1.81	-0.003	-4.31**
Work time^2/100	0.07e-3	0.10	-0.003	-2.64**	0.003	2.84**
Work time n.a.	-0.029	-2.65**	0.001	0.06	-0.047	-3.96**
Household income, ln	0.007	2.52*	0.017	3.44**	0.002	0.61
No. of household members$^{1/2}$	0.039	6.91**	0.048	5.04**	0.028	4.27**
Male	Reference group					
Female	-0.069	-17.34**				
Age	0.006	8.74**	0.006	4.88**	0.006	7.56**
Age^2/100	-0.006	-8.05**	-0.006	-4.56**	-0.006	-6.91**
Years of education, ln	0.126	13.26**	0.119	7.61**	0.132	11.77**
Single, no partner	Reference group					
Single, with partner	-0.042	-6.24**	-0.043	-3.73**	-0.038	-5.32**
Married	-0.009	-1.36	0.010	0.91	-0.026	-3.38**
Separated, with partner	-0.056	-2.82*	-0.074	-2.42*	-0.036	-1.42
Separated, no partner	-0.017	-1.43	0.007	0.32	-0.032	-2.60**
Divorced, with partner	-0.053	-4.79**	-0.051	-2.64**	-0.049	-4.30**
Divorced, no partner	-0.018	-1.70	0.037	1.62	-0.041	-4.20**
Widowed, with partner	-0.057	-2.98**	-0.057	-1.46	-0.053	-2.97**
Widowed, no partner	0.001	0.11	0.014	0.55	-0.016	-1.48
Spouse abroad	-0.005	-0.17	0.009	0.20	-0.028	-0.85
No children	Reference group					
Children	-0.007	-1.63	-0.009	-1.28	-0.009	-1.84
Employed	Reference group					
Self-employed	0.010	1.07	0.012	0.87	0.015	1.26
Part-time work	0.059	6.09**	0.067	4.14**	0.048	4.18**
Not working	-0.002	-0.20	-0.014	-1.04	0.001	0.12
Unemployed	-0.040	-5.67**	-0.043	-3.69**	-0.035	-4.27**
Military service	-0.025	-1.70	-0.022	-1.10		
Maternity leave	-0.045	-3.72**	-0.103	-1.10	-0.036	-3.59**
In education	0.036	3.75**	0.031	2.10*	0.037	3.10**
Retired	-0.005	-0.46	-0.005	-0.30	-0.005	-0.43
Western Germany	Reference group					
Eastern Germany	-0.043	-9.70**	-0.044	-5.64**	-0.038	-7.70**
Nationals	Reference group					
EU foreigners	-0.072	-11.61**	-0.104	-10.54**	-0.042	-5.42**
Non-EU foreigners	-0.087	-18.26**	-0.108	-13.79**	-0.070	-11.93**
Year dummies	Yes		Yes		Yes	
No. of observations	125,468		61,142		64,324	
Log Likelihood	-45925.002		-26774.312		-18992.645	

Notes: Probit regression with robust standard errors (clustered for individuals).
Significance levels: * 0.01<p<0.05, ** p<0.01.
Source: German Socio-Economic Panel.