

# Trust and Volunteering: Selection or Causation? Evidence From a 4 Year Panel Study

René Bekkers

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**Abstract** Participation in voluntary associations is often believed to make citizens more trusting of others. This paper reports longitudinal analyses of a time intensive form of participation—volunteering—and generalized social trust using data from three waves of the Giving in the Netherlands Panel Study spanning 4 years (2002–2006;  $n = 692$ ) refuting this belief. Trust is relatively stable over a 4 year period (0.73). Changes in volunteering are not related to changes in trust. Trust is higher among volunteers mainly because of selective attrition: persons with low trust are more likely to quit volunteering.

**Keywords** Trust · Social capital · Volunteering · Panel data

## Introduction

Voluntary associations are the back bone of civil society. When people get together, organize group activities, collaborate to reach collective goals endorsed by many fellow group members and share their experiences, they create a sense of community for themselves and for others. People enjoy being a part of groups in which people work together, and they will reciprocate with similar behaviour. In these groups, members will develop positive relations with each other, and positive beliefs about the intentions and attitudes of their fellows. What could be a more natural product of such voluntary action than trust in others?

Arguments like these have been made by numerous philosophers, social scientists, politicians, policy makers and community leaders. Robert Putnam has become widely known with the claim that there is a close connection between

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R. Bekkers (✉)  
Center for Philanthropic Studies, Faculty of Social Sciences, VU University Amsterdam,  
De Boelelaan 1081, 1081 HV Amsterdam, The Netherlands  
e-mail: R.Bekkers@vu.nl

generalized social *trust* (a ‘yes’ to the statement “In general, most people can be trusted”—henceforth ‘trust’) and civic engagement (membership and activity in voluntary associations). In *Bowling Alone* (Putnam 2000, p. 137) we read that “civic engagement and trust are mutually reinforcing” and “the causal arrows among civic involvement, [...] and social trust are as tangled as well-tossed spaghetti”. This was a theoretical argument. Putnam argued that civic engagement has a positive socialization effect: volunteering promotes trust. In addition, he acknowledged that trust may also promote volunteering. Both *selection* as well as *causation* may produce the relationship between civic engagement and trust. Selection refers to the effect of trust on civic engagement. Trusting individuals may be more likely to join and be active in voluntary associations. Causation refers to the socialization effect of civic engagement on trust. This paper disentangles selection and causation, using longitudinal panel data from a random sample of the Dutch population.

If trust promotes volunteering and volunteering promotes trust, we should observe a relation between trust and civic engagement that is ‘clear and robust and not unduly reliant on a particular data set or a particular model specification’ (Claibourn and Martin 2000). However, the evidence is far from clear and robust. The relationship between trust and measures of civic engagement of individuals is usually weak at best, and in some countries, trust is not related to civic engagement at all (Delhey and Newton 2003). While many studies have found a positive correlation between trust and membership in voluntary associations (Brehm and Rahn 1997; Dekker 2003; Delhey and Newton 2003; Putnam 2000; Scheufele and Shah 2000; Uslander 2002), the correlation is rather weak.

What is wrong with the Putnam argument? Why is civic engagement so weakly related to trust? Recent studies on the link between trust and civic engagement have focused largely on two potential answers to this question. First of all, it may be that only some types of organizations promote trust, while others do not (Stolle 1998; Stolle and Rochon 1998, Hooghe 2003). Secondly, it may be that only intense forms of civic engagement affect trust, and not mere membership or ‘checkbox activism’ (Newton 1999; Wollebaek and Selle 2002). The two possibilities, which are not mutually exclusive, are tested in the present paper using a longitudinal panel survey and appropriate regression models.

### The Need for Panel Data

More than 40 years ago, David Horton Smith (1966) noted that only longitudinal data may disentangle socialization and selection effects, a call he repeated in 1975 (Smith 1975). However, previous studies on civic engagement and trust have been conducted almost exclusively with cross-sectional data. There are only a few exceptions (e.g., Claibourn and Martin 2000) to the rule that studies on the link between civic engagement and trust are based on cross-sectional data. Using cross-sectional data, relationships between trust and civic engagement can be interpreted from processes of selection as well as causation. Even sophisticated techniques such as two stage least squares regression analyses, a technique used by Brehm and Rahn (1997), do not rule out the possibility that unobserved variables are driving the results. Illustrating this point, Uslander (2002) used the same dataset as Brehm and

Rahn (1997) and showed that including more or different variables leads to profoundly different conclusions.

Echoing David Horton Smith's calls, Stolle (2003, p. 25) describes the solution to the problem: "Ideally, one would track association members over time in order to filter out the separate influence of group membership on trust, controlling for self-selection effects". This is exactly the approach of the present paper. In addition to the use of a prospective panel survey tracking individuals over time, this paper contributes to the literature by testing hypotheses on the development of trust through civic engagement.

## Theory

### The Stability Hypothesis

A first reason why voluntary action does not promote trust is because trust is a pretty stable characteristic of persons that is not amenable to change (Rotter 1967; Uslaner 2002). Some people just seem to be trusting persons 'by nature', and continue to be trusting persons throughout their entire lives. Uslaner (2002) calls them 'trusters'. Others—distrusters—keep on seeing the dark side of human nature in everything other people do. There are several psychological reasons for the stability of trust. One reason is that trust is correlated with basic personality traits that are stable over the life course. In terms of the 'Five Factor Model' of personality, trust is a facet of agreeableness (Graziano and Eisenberg 1997), or may even be the sixth basic dimension of human personality (Ashton and Lee 2001). Trust is also known to be correlated with two other of the 'Big Five': trusters are less neurotic (Ross et al. 2002) and more extraverted (Couch and Jones 1997) than distrusters. Previous research is mute on the relationship between trust and the two other dimensions of personality, openness to experience and conscientiousness. However, it is likely that openness to experience is positively related to trust. Openness to experience is negatively related to political intolerance (Flynn 2005), which is negatively related to trust (Deutsch 1958; Rosenberg 1956). Because personality characteristics are highly stable over the life course (Roberts and DelVecchio 2000), it is also likely that trust is a stable characteristic of persons.

Trust is not only a stable characteristic because it is a product of other stable characteristics, but also because it affects our interactions with others and our interpretation of these interactions. Our basic level of faith in the honesty, fairness and helpfulness of other people shapes our social interactions and our interpretation of these interactions. Trust and distrust create their own truth: they are self-fulfilling prophecies. People who trust others are more likely to be trusted in turn (Rotter 1967; Uslaner 2002, p. 25; Reuben et al. 2008; but see Kiyonari et al. 2006 for a different finding). Trusters are more likely to elicit cooperative reactions from others (Kelley and Stahelski 1970). Thus, trusters obtain lots of evidence for their view that most people can be trusted. Distrusters, on the other hand, are less likely to become more trusting in their interactions with others because they suspect some ulterior self-serving motive behind every move of their interaction partners.

Cooperating with a distruster is more difficult. We would rather avoid dealing with distrusters in the first place, but if we have no choice, we are more aware of potential problems. From the perspective of the distruster, small signs of trouble confirm the belief that people cannot be trusted anyway. Previous research has in fact found that social trust is fairly stable over substantial periods of time (Uslaner 2002, pp. 61–68, 102). This perspective gives rise to the *stability hypothesis: generalized social trust is a relatively stable characteristic of persons that does not change in response to changes in volunteering.*

According to the stability hypothesis, the relationship between trust and civic engagement—while weak—is the result of selection-effects: high trusters are more likely to get involved and remain involved in voluntary associations than low trusters.

### The Group Socialization Hypothesis

Like school, the family and one's neighbourhood, voluntary associations are reference groups that socialize values and attitudes among their members. It is reasonable to expect that participants in voluntary associations will align their trust to the level of trust among co-participants (Hooghe 2003), assuming that trust is a value that can be transmitted from one individual to the next. This assumption is based on a different view on trust than the one outlined above in which trust is viewed as a stable personality trait. From the socialization perspective, trust can be learned from other people who are trusting. From the stability hypothesis, trust does not change in response to interactions with others.

Group socialization may explain why there is only a weak link between overall participation in voluntary associations and trust when participants in some voluntary associations have lower than average levels of trust, while other groups have a higher level of trust. Empirical evidence reveals that there is substantial variance between groups in their average level of trust. Uslaner (2002) found that conservative Protestant groups tend to have lower than average levels of trust. Hooghe (2003) studied the relation between membership in voluntary associations and ethnocentrism. Ethnocentrism is a negative attitude towards outgroup members that is negatively related to trust. Hooghe found that organizations differ with regard to their average level of ethnocentrism, as a function of the average level of education. The average level of education of co-members had a separate effect on the level of ethnocentrism, beyond the effect of the respondent's own level of education. Like ethnocentrism, trust is correlated with education (Uslaner 2002 p. 90–91). Thus, from the group socialization perspective, one expects that the trust level of a volunteer depends on the average level of trust and education of co-volunteers. Volunteers who are working in an organization in which the average levels of trust and education are higher should experience a larger increase in trust.

A crucial yet implicit assumption in much of the literature on trust and civic engagement is that interactions within voluntary associations are pleasurable (Stolle 2003 p. 25; Marschall and Stolle 2004). One has to assume that volunteers are more likely to have cooperative experiences in their voluntary associations than uncooperative experiences. This assumption is not unreasonable, since members

of voluntary associations are more trusting persons than non-members, and trusters are more cooperative and honest in social interactions (Deutsch 1958; Rotter 1967, 1980). But voluntary associations differ with regard to the average level of trust among their members. One reason why civic engagement does not necessarily promote trust could be that civic engagement only promotes trust when interactions with fellow association members are positive. From this perspective, the hypothesis follows that volunteering promotes trust more strongly when volunteering entails more positive social relations with other volunteers. Voluntary associations that attract members with above average levels of trust should promote trust because interactions in these organizations are more pleasurable. Voluntary associations with constituencies below average on trust should diminish the level of trust among new members.

Thus the group socialization hypothesis is that *the higher the average level of trust among volunteers in organizations in which an individual volunteers, the more positive the effect on trust.*

### The Contextual Diversity Hypothesis

Generalized social trust is about people one does not know personally (Uslaner 2002). Experimental studies in social psychology reveal that ‘similarity breeds liking’: people are more strongly attracted to people who are like themselves, and like similar alters more strongly than dissimilar alters (Byrne 1971). Interactions with strangers who are dissimilar are thus less likely to generate positive experiences than interactions with similar others. Similarity may occur with respect to various types of characteristics, such as demographic characteristics (e.g., gender), socio-economic characteristics (e.g., education) and cultural or attitudinal characteristics (e.g., religion, political preference and trust). As explained in the previous section, the level of trust among co-volunteers is a key factor in this regard. Cooperation problems are more likely to arise when interaction partners have different expectations about each other, especially in ‘noisy situations’ in which it is not clear whether a failure to perform is due to external situations or to a lack of commitment (Klapwijk and Van Lange 2009; Brucks and Van Lange 2007). Because trust is exactly about these expectations—higher levels of trust being associated with a more tolerant approach to failures in noisy situations—a higher diversity in trust creates stronger discrepancies in expectations. If trust depends on positive experiences, diversity in trust among co-volunteers will lower the level of trust.

Still, however, positive experiences with dissimilar others may support the view that strangers can be trusted. If participation in voluntary associations affects trust, it should matter how similar the members of voluntary associations are to each other. The famous distinction here is between ‘bridging’ and ‘bonding organizations’ (Putnam 2000, p. 22). Bonding organizations bring together people who are similar to each other, while bridging organizations connect dissimilar persons. Participation in bridging organizations has been found to be related to elevated trust levels, while participation in bonding organizations often has not (Stolle 1998; Stolle and Rochon 1998; Wollebaek and Selle 2002; Hooghe 2003). Some studies even show that

bonding networks are associated with higher particularized trust in fellow group members, but lower generalized trust in strangers (Uslaner 2002; Welch et al. 2005).

It would be great if people become more trusting of others in general when they have contacts with more dissimilar others. However, a positive relationship between organizational diversity and trust does not prove that organizational diversity promotes trust. Participation in voluntary associations is voluntary. Individuals with low trust will avoid voluntary associations with a large diversity because they fear interactions with dissimilar others. After joining, only trusters survive in a heterogeneous organization and distrusters are more likely to leave. Trust is a requirement for participation in heterogeneous voluntary associations: people with more trust in others are more likely to get engaged in voluntary action and sustain it.

However, when contextual diversity is imposed rather than chosen it may have a very different effect. Extant research placing individuals in experimental situations or comparing individuals in communities with different levels of diversity has indeed consistently found negative effects of diversity on trust. People living in more heterogeneous communities have lower levels of trust (Alesina and La Ferrara 2000; Alesina 2002; Delhey and Newton 2005; Putnam 2007), and are less generous to charities (Okten and Osili 2004). Facing dissimilar alters, people are less likely to display trust in experimental game situations (Glaeser et al. 2000). In sum: heterogeneous contexts that are not selected may make people less trusting rather than more trusting. Thus, the contextual diversity hypothesis that will be tested below is: *When self-selection of high trust individuals in heterogeneous voluntary associations is taken into account, organizational diversity has no or a negative effect on trust.*

### Where You End Depends on Where You Start: Floor- and Ceiling-Effects

The hypotheses above have been formulated regardless of an individual's base line level of trust. But trust is self-reinforcing. As Uslaner (2002, p. 136) argues: "civic participation can produce trust, but only when there is faith in strangers initially". From this argument, one would expect that volunteering increases trust more strongly among those with higher initial levels of trust. At the same time, however, it seems reasonable to expect floor- and ceiling-effects: individuals with low initial levels of trust may be less likely to lose more trust, and more likely to gain trust. To explore potential floor- and ceiling-effects, effects of volunteering will be investigated separately for individuals with low or high initial levels of trust.

## Data and Methods

### Design

Data from a longitudinal panel survey were used to test the hypotheses on the relationships between trust and volunteering. The Giving in the Netherlands Panel Survey (GINPS; Schuyt 2002) was designed in 2001 to track changes in philanthropy and volunteering among a random sample of households in the

Netherlands. The GINPS is conducted through the Internet by TNS/NIPO, a polling institute, among respondents from a pool of about 72,000 individuals in about 40,000 households who regularly participate in online research. An important concern with web based survey research is the sampling procedure. Internet access in the Netherlands is among the highest in the world, and there is very little difference in internet access between social groups (SCP 2004). To reduce selectivity in the sampling procedure, the pool of respondents was built from random samples of households from the population register. Because inclusion in the pool required internet access, prospective pool members were offered a personal computer with internet access when they did not possess one. In addition, prospective pool members were offered financial compensation in exchange for participation in surveys. For the present surveys, compensation was about €20 per hour. To some extent, the reward may have mitigated the selectivity of panel attrition (see below).

### Participants

The GINPS started in May 2002 with a random sample of 1,707 households who responded to an invitation via e-mail to participate in an online survey. In addition, an oversample of 254 households in which the breadwinner was affiliated with a Protestant church was included because previous research shows they donate disproportionately large amounts to charitable causes and are disproportionately active in volunteering (Bekkers 2002). Unfortunately, records of invitations have been deleted by the research company contracted for the fieldwork, which makes it impossible to compute the response rate. All respondents were known to have access to the internet and working e-mail addresses. The sample is representative of the Dutch population with regard to age, gender, and geographic region. Further details on the design of the GINPS can be found in Schuyt (2003) and Bekkers and Wiepkink (2006).

The second wave of data collection took place in May 2004. A total number of 1,503 questionnaires were made available. 187 individuals did not respond to the invitation; 1,316 individuals completely 'returned' the questionnaire (response rate 1: 82.9%). 1,246 of these respondents also took part in the first wave (attrition of 36.6%). The third wave of the survey was completed in April and May 2006 by 1,474 respondents (response rate 1: 78.9%). 692 of these respondents also took part in wave 1 and 2 (total attrition of 65%). An analysis of panel attrition is presented below.

### Measures

#### *Trust*

In all three waves, trust was measured with two statements, originally from Rosenberg (1956): "In general, most people can be trusted" and "You can't be too careful in dealing with other people". Usually, these sentences are presented to respondents as two extreme poles of one survey item. Using the two poles as

separate items, the concept of trust is measured with a higher level of reliability. Response categories ranged from 1 (completely disagree) to 5 (completely agree). The second statement was reverse coded so that a higher score represents more trust. In 2002, the correlation between the two items was .335. Cronbach's alpha coefficient for reliability was .499. In 2004, the correlation was .421 and alpha .590. In 2006, the correlation was .404 and alpha .574. While these correlations are not as high as one would desire for two items that supposedly measure the same concept, they are high enough to consider them as imperfect indicators and average the items into a scale. The correlation between trust in 2004 and 2002 is .459. The correlations between trust in 2006 and trust in 2004 and 2002 are .502 and .446, respectively. Two dummy variables were created for low and high initial trust levels, with individuals receiving a score of 1 when their 2002 trust score was one standard deviation (.696) below or above the mean (3.243), respectively. Respondents within one standard deviation of the mean were the reference category.

### *Membership*

Membership in voluntary associations was measured in the first wave (2002) with a list of 15 different types of voluntary associations: sports, health, human services, education, culture and the arts, neighbourhood, residential affairs, environment, nature preservation, animal protection, politics, union, international solidarity, refugees, religion, and 'other'. Due to the low numbers of participants in these categories, neighbourhood and residential affairs were collapsed into one category of community organizations; environmental, nature preservation and animal protection were collapsed in one category; political organizations and unions were collapsed; as well as international solidarity and refugee organizations.

### *Volunteering*

Volunteering behaviour was measured with an extensive 'method-area' module (Rooney, Steinberg and Schervish 2004) that included 13 prompts for types of volunteer activities in addition to the list of 15 different types of voluntary associations that respondents may volunteer for. Volunteering was defined as 'regular, unpaid work on behalf of an organization or group' without monetary compensation. A variable *general volunteering* was created, with all respondents who reported that they had been active as a volunteer in the past year scoring 1 and 0 otherwise. In 2002, 56.6% of the respondents volunteered. In 2004, 43.8% volunteered. In 2006, 44.1% volunteered. Respondents who *volunteered for non-religious organizations* only were distinguished from respondents who *volunteered for religious organizations*. In each wave, a variable was created counting the *number of different types of voluntary associations* that volunteers are working for. In 2002, the average number of voluntary associations that volunteers were working for was 1.72. In 2004 and 2006 volunteers worked for 1.59 and 1.57 different types of organizations, respectively. The average number of hours volunteered was 25 in 2002, 16.8 in 2004, and 14.5 in 2006.



### *Organizational Trust and Diversity*

To test hypotheses assuming that the effect of volunteering on trust varies between types of organizations that volunteers work for, a range of diversity measures was constructed. What follows here is a brief discussion of these measures. More details on the construction of these variables can be found in the [Appendix](#). The *mean level of trust* and the *variance of trust* among co-volunteers were computed by taking the mean of all respondents in the first wave who reported volunteering and spent most of their time in the specific type of volunteer organization in which the respondent also reported volunteering. Non-volunteers were assigned the mean level of trust and the variance in trust among all non-volunteers in the first wave.

The mean trust and variance in trust measures serve as indicators of positive cooperating experiences. Because trust promotes cooperation, volunteers are more likely to have positive cooperative experiences in organizations with a higher average level of trust among co-volunteers. From the socialization it is expected that volunteering for a type of organization in which other volunteers have a higher level of trust increases individual trust.

In organizations with a higher level of variance in trust, volunteers are more likely to encounter more dissimilar alters. Experiences with cooperation in such organizations are less positive but more varied, creating a more challenging environment in which people can learn to trust others. From the organizational diversity hypothesis it is expected that volunteering for a type of organization in which the differences in the level of trust among other volunteers are larger increases individual trust.

Similar to the measures of mean level and variance in trust, measures of the mean level of education and variance in education among volunteers were computed to test whether a higher level of education and a higher level of variance in education among volunteers contributes to the development of trust. The level of education is positively related to trust (Uslaner 2002; Putnam 2007). From the socialization hypothesis it may be expected that trust increases when interacting with higher educated co-volunteers. From the diversity hypothesis it may be expected that a higher variance in education generates more diverse social interactions, providing opportunities to learn to trust individuals with different backgrounds.

In addition to the measures of mean level and variance in trust and education, a series of heterogeneity measures was constructed and analyzed as predictors of trust. The measures concern heterogeneity in gender, education, religion and political preference. They are constructed as Herfindahl-indices, i.e. the likelihood that a randomly chosen other volunteer in the organization in which the respondent reported volunteering is of a different gender, has a different level of education, a different religious denomination, and a different political preference as the respondent. Herfindahl-indices are often used in the literature to measure diversity (Borgonovi 2008; Leigh 2006; Putnam 2007). The indices constructed here are multiplied by 100 reflecting the proportion of the volunteers of different gender, education, religion and political preference. A higher score indicates a higher level of diversity. The diversity hypothesis assumes that higher levels of diversity are associated with higher levels of trust.

Finally, two measures were created as proxies for positive experiences in voluntary associations: *familiarity* and *mobilization*. New volunteers are often members of the organization before they start to volunteer. They know people in the organization personally, which makes them more familiar with the work of the organization and its members. Familiarity is associated with more positive attitudes (Zajonc 1968). The *familiarity* measure is based on the responses to the question posed to volunteers whether they knew any members in the organization before they started volunteering and whether they were members themselves. For each 'yes' the individual familiarity score increases with one point. The familiarity measure in the analyses below is the average familiarity score for volunteers in the category of organizations in which the respondent reported volunteering. The *mobilization* measure represents the proportion of volunteers who have been asked personally to start volunteering.

### *Socio-Demographic Characteristics*

Socio-demographic characteristics measured in the GINPS include *income* (log of class mean for gross household income per year, ranging from €2k to €272k and over), *marital status* (married = 1), *having children* (1 or more = 1), working status (dummy variables for *part-time job* and *no paid work*; a full time job was the reference category), dummies for *level of education* (ranging from 1—primary school to 7—university or postgraduate education), *gender* (female = 1), age (dummy variables for *age 31–40*, *41–50*, *51–64*, and *65 years and over*; 18–30 is the reference category), *town size* (in thousands of inhabitants), dummy variables for religious affiliation (*Catholic*, *Reformed Protestant*, *Rereformed Protestant*, or *other religion*; no religious affiliation was the reference category), *frequency of church attendance* (number of times per year). All socio-demographic characteristics were measured in 2002.

### *Panel Attrition*

Trusting individuals are more likely to respond to surveys for which no compensation is offered (Uslaner 2002, p. 25). Like volunteering, participation in surveys actually is a form of prosocial behaviour: it is unpaid volunteer work. Despite the financial compensation for participation in the survey, panel attrition in the GINPS from 2002 to 2006 was indeed selective with regard to trust, as well as with regard to income, religious affiliation, age, working status, and size of residence. Persons with high trust, high income and persons affiliated with the Catholic Church were less likely to leave the panel, while older persons, urban residents, and persons without paid work were more likely to leave the panel. Additional analyses revealed that trust was not related to leaving the panel between wave 1 and 2, but was related to attrition between wave 2 and 3. This is unfortunate because selective attrition decreases the variance in trust, and makes it difficult to detect effects of trust on volunteering. Fortunately, panel attrition was not selective with regard to participation in volunteer work. Effects of selective attrition on the parameter estimates for the effects of trust on changes in volunteering were

estimated using Heckman two stage models with trust, age, Catholic affiliation, income, town size and paid work variables in the first stage and trust as the only variable in the second stage. Selection models are not available for panel-data regression models such as fixed-effects or GLS random-effects models.

## Results

### Mean Level Changes in Trust

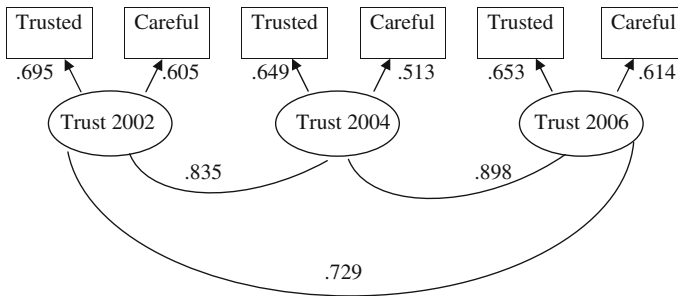
The average level of generalized trust declined slightly from 2002 to 2004 and increased again from 2004 to 2006. In 2002, only a quarter (25.4%) of the respondents agreed with the statement 'you can't be too careful in dealing with other people'. In 2004, this had increased to 37.0%; in 2006 it was down to 33.0% again. The background to these changes may be formed by the assassinations of Pim Fortuin on May 6 2002 and Theo van Gogh on November 2 2004.

Distrust varies more strongly over time than trust. Agreement with the statement 'most people can be trusted' remained about the same (46.9% in 2002, 49.5% in 2004, and 47.4% in 2006). Taking the 1–5 scores for the two items together, the average trust score decreased from 3.24 in 2002 via 3.11 in 2004 to 3.12 in 2006. In each wave, volunteers have higher levels of trust than non-volunteers (in 2002: 3.35 vs. 3.18; in 2004: 3.22 vs. 3.02; in 2006: 3.23 vs. 3.03). All differences between volunteers and non-volunteers are significant ( $F$ -values of 25.322, 24.114, and 22.436, all  $p < .000$ ).

The group of non-volunteers contains both members of voluntary associations as well as non-members. Non-members were significantly less trusting than nominal members (who did not volunteer). The mean trust score for non-members was 3.09; for nominal members 3.25 ( $F$ -value 14.008,  $df = 1$ ,  $p < .000$ ). Volunteers, in turn, were significantly more trusting than non-members ( $F$ -value 7.000,  $df = 1$ ,  $p < .008$ ). When nominal members and volunteers are collapsed into one group of members, they are significantly more trusting than non-members (3.30 vs. 3.09,  $F$ -value 31.882,  $df = 1$ ,  $p < .000$ ).

### The Stability of Trust

In the current dataset, trust is measured with two items. A measure for the stability of trust can be obtained by estimating the correlation between the latent concept of trust measured by these two items, correcting for measurement errors in the items. To estimate this correlation, a Structural Equation Model (SEM) was estimated using the maximum likelihood function in AMOS. The model includes paths from a latent trust variable to the two trust items in each wave and correlations between the latent trust variables in 2002, 2004, and 2006 (see Fig. 1). The standardized estimate for the stability of trust over a period of 4 years is .729. Trust was somewhat more stable from 2004 to 2006 (.898) than from 2002 to 2004 (.835). The fit of the model does not meet conventional standards according to some criteria ( $\chi^2 = 82.495$ ,



**Fig. 1** Structural equation model of trust 2002–2006 (standardized estimates;  $n = 2943$ )

( $df = 6$ ),  $p < .000$ ; RMSEA = .066; NFI = .947). Because trust was measured with only two items, the fit cannot be improved due to lack of degrees of freedom.

The evidence from the SEM clearly speaks in favour of the stability hypothesis: over a period of 4 years, trust is a highly stable characteristic of individuals. The estimate of .73 is close to what one would expect for a stable characteristic. It is comparable to stability coefficients of ‘Big Five’ personality characteristics (Roberts and DelVecchio 2000).

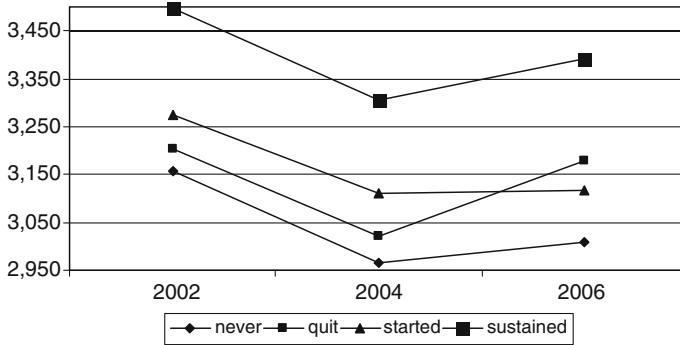
### Trust and Changes in Volunteering

Even if trust is a relatively stable characteristic, as Fig. 1 shows, it remains possible that changes in trust are systematically linked to changes in volunteering activity. However, a comparison of the trust scores of various categories of volunteers over the course of the three waves development shows that changes in volunteering are not systematically related to changes in trust (see Table 1).

In all three waves, sustained volunteers have the highest trust score and differ significantly from those who did not volunteer in any of the three waves. Trust is lowest among those who never volunteered between 2002 and 2006. Those who quit or started volunteering had significantly lower levels of trust than those who sustained volunteering except for those who started volunteering in 2004 and those who quit volunteering in 2006. The result that people who quit volunteering have lower trust scores than sustained volunteers suggests that volunteering has no

**Table 1** Changes in volunteering and trust (2002–2006,  $n = 692$ )

Category	Trust in 2002	Trust in 2004	Trust in 2006	N	%
Sustained volunteering	3.497	3.305	3.392	167	24.13
Started volunteering by 2004	3.288	3.157	3.149	111	16.04
Started volunteering by 2006	3.245	3.000	3.041	46	6.65
Quit volunteering by 2004	3.279	2.966	3.082	58	8.38
Quit volunteering by 2006	3.088	3.100	3.325	40	5.78
Never volunteered	3.156	2.965	3.009	270	39.02
All	3.271	3.088	3.149	692	100.00



**Fig. 2** Changes in trust by changes in volunteering 2002–2006

enduring socialization effect on trust. In addition, those who never volunteered have trust scores that are close to the scores of those who quit volunteering, with one exception: those who quit volunteering between 2004 and 2006 become *more* trusting. In 2004 those who quit 2 years later did not differ from respondents who never volunteered, but in 2006 the volunteers who quit have a significantly higher score on trust than those who never volunteered. This result runs counter to the socialization perspective. One would expect those who quit volunteering to lose trust more than those who sustain volunteering. The result that those who started volunteering by 2004 or 2006 had higher trust scores than those who never volunteered suggests that volunteering requires a higher than average level of trust.

Figure 2 displays these differences graphically, collapsing all those who quit volunteering between 2002 and 2004 and between 2004 and 2006 in one category of quitters and all those who started volunteering in one category of starters. Clearly, trust decreased from 2002 to 2004 and then increased a little from 2004 to 2006 among all categories. But changes in volunteering are not associated with changes in trust as predicted by the socialization perspective. Between 2002 and 2004, the order of the four categories does not change at all.

### The Effect of Volunteering on Trust

To examine to what Extent selection effects are responsible for the differences in Table 1, a fixed effects regression analysis of trust was conducted (see Table 2). In the analysis of panel data, fixed effects regression models are usually to be preferred over random effects models (Halaby 2004). Fixed effects models estimate the relation between changes in one variable and changes in an outcome variable within the same respondent. The model ‘fixes’ all other characteristics of the respondents. A statistical criterion for the decision to use a fixed effect model rather than a random effects model is a significant result of the Hausman test comparing the parameter estimates in random and fixed effects models. In our case, the Hausman test is strongly significant: the Chi Square statistic comparing the estimates from the fixed effects model 1 of Table 3 with a random effects specification is 27.26 ( $df = 3, p < .000$ ). The fixed effects model estimates the effect of a one unit change

**Table 2** Fixed effects regression analyses of trust on volunteering (n = 3913, n<sub>i</sub> = 1964)

	Model 1	Model 2
Volunteering <sup>a</sup>	-.008 (.035)	
Religious volunteering <sup>a</sup>		-.004 (.069)
Other volunteering <sup>a</sup>		.011 (.044)
Hours volunteered		-.000 (.000)
# Organizations		-.008 (.023)
Year 2004	-.149 (.022)***	-.152 (.023)***
Year 2006	-.105 (.028)***	-.109 (.029)***
(Constant)	3.252 (.019)***	3.254 (.022)***

Entries are regression coefficients with standard error in *parentheses*

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

<sup>a</sup> Reference category: no volunteering

Model 1:  $R^2$  within: .0236; between: .0004. F-value: 15.67 (df = 3,1963),  $p < .000$

Model 2:  $R^2$  within: .0237; between: .0002. F-value: 7.85 (df = 6,1963),  $p < .000$

in volunteering on the change in trust in the consecutive wave within respondents. Thus, a positive effect of volunteering on trust reflects an increase in trust upon joining the volunteer work force (a change from 0 to 1 on the volunteering variable), and a decline in trust upon leaving (a change from 1 to 0 on the volunteering variable). In the current specification, the effects of leaving and joining are assumed to have opposite signs and to be of equal magnitude. In additional specifications this assumption will be tested.

Table 2 reveals that changes in volunteering are not related to consecutive changes in trust. The significantly negative effects of the dummy variables for the years 2004 and 2006 represent the mean decline in trust in these years. Additional analyses (results available upon request) reveal that interactions between volunteering and year were not significant, indicating that differences between volunteers and non-volunteers did not change significantly over the years.

The non-significant effect of volunteering in the fixed effects model contrasts sharply with the strongly significant estimate in a random effects model (.125 (.025),  $p < .000$ ). The random effects estimate corresponds to the average difference in trust between volunteers and non-volunteers in the three waves. The fixed effects estimate is the average change in trust within respondents who start or quit volunteering between 2002 and 2004 or between 2004 and 2006. The average change is very close to zero. Additional analyses (results available upon request) separating respondents who quit volunteering from those who started volunteering show that changes in both groups were in the opposite direction, but were not significant.

In model 2, volunteering is broken down into more specific variables. Volunteering for religious organizations is distinguished from volunteering for non-religious organizations; in addition, effects of changes in the number of hours volunteered and the number of organizations are estimated. In this specification, the estimates for number of hours volunteered and the number of organizations reflect

**Table 3** Fixed effects regression analyses of trust on volunteering and organizational characteristics (n = 3913, n<sub>i</sub> = 1964)

	Model 1	Model 2	Model 3	Model 4
	Heterogeneity in trust + education	+base line	All types of heterogeneity	+base line
Volunteering <sup>a</sup>	-.026 (.038)	-.017 (.037)	-.030 (.040)	-.002 (.039)
Trust among co-volunteers	.038 (.045)	-.097 (.057)	.063 (.047)	.024 (.047)
Variance in trust among co-volunteers	.022 (.032)	-.025 (.042)	.033 (.034)	.038 (.034)
Average education among co-volunteers	.022 (.037)	-.033 (.049)	.033 (.038)	.034 (.037)
Variance in education among co-volunteers	.020 (.029)	.011 (.037)	.024 (.030)	.034 (.029)
Trust among co-volunteers * low trust <sup>b</sup>		-.431 (.167)*		
Trust among co-volunteers * high trust <sup>b</sup>		.394 (.089)**		
Variance in trust among co-volunteers * low trust <sup>b</sup>		-.351 (.118)**		
Variance in trust among co-volunteers * high trust <sup>b</sup>		.394 (.089)***		
Education among co-volunteers * low trust <sup>b</sup>		-.016 (.158)		
Education among co-volunteers * high trust <sup>b</sup>		.142 (.076)		
Variance in education among co-volunteers * low trust <sup>b</sup>		-.388 (.120)***		
Variance in education among co-volunteers * high trust <sup>b</sup>		.059 (.058)		
Gender heterogeneity			.008 (.027)	.018 (.034)
Religious heterogeneity			-.018 (.042)	-.105 (.052)*
Political heterogeneity			.001 (.031)	.021 (.041)
Average familiarity with organization			-.042 (.035)	-.051 (.047)
Average mobilization level			.039 (.112)	-.066 (.152)
Gender heterogeneity × low trust				.046 (.086)
Gender heterogeneity × high trust				-.028 (.052)
Religious heterogeneity × low trust				.228 (.149)
Religious heterogeneity × high trust				.148 (.087)

Table 3 continued

	Model 1	Model 2	Model 3	Model 4
	Heterogeneity in trust + education	+base line	All types of heterogeneity	+base line
Political heterogeneity × low trust				.121 (.127)
Political heterogeneity × high trust				-.017 (.067)
Average familiarity × low trust				-.113 (.126)
Average familiarity × high trust				.083 (.070)
Average mobilization × low trust				-.643 (.392)
Average mobilization × high trust				.348 (.215)
Year 2004	-.128 (.031)***	-.127 (.025)***	-.137 (.027)***	-.148 (.027)***
Year 2006	-.083 (.031)**	-.081 (.030)**	-.094 (.032)**	-.103 (.031)***
(Constant)	3.240 (.021)***	3.237 (.020)***	3.246 (.021)***	3.246 (.021)***

Entries are regression coefficients with standard error in *parentheses*

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

<sup>a</sup> Reference category: no volunteering

<sup>b</sup> Reference category: within one standard deviation of the mean

Model 1:  $R^2$  within: .0250; between: .0027.  $F$ -value: 7.10 ( $df = 7,1942$ ),  $p < .000$

Model 2:  $R^2$  within: .0731; between: .1402.  $F$ -value: 10.17 ( $df = 15,1934$ ),  $p < .000$

Model 3:  $R^2$  within: .0268; between: .0029.  $F$ -value: 4.45 ( $df = 12,1937$ ),  $p < .000$

Model 4:  $R^2$  within: .0848; between: .0920.  $F$ -value: 8.11 ( $df = 22,1927$ ),  $p < .000$

Model 5:  $R^2$  within: .0946; between: .1257.  $F$ -value: 6.69 ( $df = 30,1919$ ),  $p < .000$

changes in the intensity of volunteering. However, changes in these variables are also not significantly related to changes in trust. These results strongly speak against the socialization hypothesis that volunteering breeds trust. Ruling out selection effects, there is no change in trust upon changes in volunteering.

### Organizational Diversity, Value Congruence, and Trust

Does the result that there is no average change in trust after people join, quit or intensify volunteering hold for all types of volunteering? The possibility remains that volunteering in organizations with a higher diversity or a higher average level of trust and education do promote trust, while volunteering in homogeneous or lower than average levels of trust environments diminish trust, as predicted by the organizational diversity and value congruence hypotheses.

The results in model 1 of Table 3 do not support these hypotheses. Changes in the average level of education and trust and the variance in trust among volunteers in the organizations in which people volunteer are not significantly associated with



changes in trust. These results speak against the hypothesis on value congruence, and support the hypothesis that there is no effect of organizational diversity. The results of model 3 reveal that trust does not vary either with the level of organizational heterogeneity in gender, religion, or political preference. Neither do higher levels of familiarity and mobilization promote the development of trust. It does not matter for the effect of volunteering on trust how often volunteers are asked personally or how familiar new volunteers are with the organization.

### Conditioning on Base Line Trust

Model 2 in Table 3 tests whether contextual effects vary with base line individual levels of trust. Note that the high and low base line level of trust variables should be evaluated relative to the reference category of respondents within one standard deviation of the mean. The results show that indeed the effects of average trust and variance in trust differ significantly between respondents who initially had high and low levels of trust. But the results are not encouraging from a practical perspective. The positive interaction effect of high trust and average trust indicates that initially high trusting individuals become even more trusting when they start volunteering in high trust environments. The negative interaction effect of low trust and average trust indicates that converse holds for low trusting individuals. They become even less trusting when they volunteer in a high trust environment. This pattern of results corresponds to the conclusion of Uslaner (2002) that civic engagement only amplifies pre-existing differences in trust.

The results of model 2 in Table 3 also show that variance in trust among co-volunteers is not related to individual trust. But variance in trust interacts negatively with low trust, indicating that initially low trust individuals become less trusting when their volunteer environment contains a larger variety of trust levels. The reverse is found for high trust individuals: their level of trust increases when their volunteer environment contains a larger variety of trust levels. The effect of the average level of education is not significant and does not vary with the own level of education of volunteers. It makes no difference for the development of trust whether a person starts volunteering in an organization with primarily lower educated or higher educated volunteers. A larger variance in the level of education does not affect the development of trust among those with higher or intermediate levels of trust. Those with initially lower levels of trust, however, do lose trust when the variance in education among co-volunteers is higher.

Model 4 of Table 3 shows that the effects of organizational heterogeneity do not vary with the base line level of trust. There is one marginally significant interaction: individuals with low initial levels of trust tend to become less trusting as they start to volunteer in organizations where a high proportion of volunteers is asked to volunteer personally.

### The Effect of Trust on Volunteering

The previous analyses reveal that there is no main effect of volunteering on trust. Because we observed a significant difference in trust between volunteers and

non-volunteers in Table 1, there should be an effect of trust on volunteering. Theoretically, this effect could materialize in the form of a higher likelihood of trusters to start volunteering, or a lower likelihood of trusters to quit volunteering, or both. Probit analyses of changes in volunteering between 2002 and 2006 on the base line level of trust support both interpretations. Among non-volunteers in 2002 ( $n = 1233$ ), a one standard deviation increase in trust in 2002 is associated with a 2.3% higher probability of starting to volunteer between 2002 and 2006 (baseline probability: 13.0%;  $z = 1.79$ ,  $p < .074$ ). Among volunteers in 2002 ( $n = 731$ ), a one standard deviation increase in trust in 2002 is associated with a 3.5% lower probability of quitting to volunteer (baseline probability: 13.6%;  $z = -2.14$ ,  $p < .032$ ). In Heckman selection models correcting for selective panel attrition, the effect of trust on starting to volunteer becomes larger (8.0%) but is not significant ( $z = 0.98$ ;  $p < .329$ ); the effect of trust on quitting also becomes larger (-33.3%) and remains significant ( $z = -2.47$ ,  $p < .014$ ).

Because most volunteers are recruited by existing volunteers (Bowman 2004), one would also expect that trusting individuals are more likely to be asked to volunteer. This is indeed the case. A one standard deviation increase in trust in 2002 is associated with an 8.3% higher probability of having been asked to volunteer between 2004 and 2006 (measured in 2006; baseline probability 20.3%;  $z = 3.44$ ,  $p < .001$ ).

## Conclusion and Discussion

This paper shows that civic engagement and trust are related primarily because of selection of trusting individuals into civic engagement. The empirical evidence clearly rejects the socialization hypothesis that volunteering breeds trust. Changes in volunteering are not associated with changes in trust, except in very specific circumstances that will be discussed below. Trust is a relatively stable characteristic of people that does not change in response to changes in volunteering. The standardized estimate for stability of trust over a period of 4 years, corrected for measurement error, is .73.

The analyses above reveal that volunteers have a higher level of trust because those who are less trusting are less likely to continue volunteering and are selected out of the population of volunteers. When people have higher levels of trust to begin with, they are more likely to be asked to volunteer, and when they were volunteering already, they are more likely to sustain volunteering. But sustained volunteerism does not promote trust. These results imply that volunteering selects for trust, and does not produce it.

The findings reported in this article go beyond those of Claibourn and Martin (2000), who used data from the Niemi-Jennings political socialization panel study to study the reciprocal effects between trust and membership of voluntary associations. Claibourn and Martin found that changes in memberships since 1965 did not lead to changes in trust in 1982. The present study shows that also changes in volunteering—a much more intense experience than mere membership—do not lead to changes in trust. The results support the *stability hypothesis*.

In addition, the present study tested three hypotheses on conditions that moderate the effects of civic engagement on trust. The *organizational diversity hypothesis* predicted that volunteering in more diverse voluntary associations promotes trust. The evidence clearly rejected this hypothesis. Volunteering in more diverse voluntary associations does not promote trust more strongly than volunteering in less diverse voluntary associations. The *group socialization* or *value congruence hypothesis* predicts that the effect of volunteering on trust depends on the average level of trust among co-volunteers. The empirical evidence also rejected this hypothesis. Volunteering in organizations in which volunteers have a higher level of trust or education does not promote trust more strongly than in organizations where volunteers have lower average levels of trust and education.

The conclusion that there is no overall causal effect of volunteering on trust implies that getting more people involved in volunteering does not necessarily lead to an increase of the level of generalized social trust. Of course, this conclusion does not imply that volunteering has no positive effects at all on attitudes and social relations towards others. Volunteering may promote attitudes like tolerance for diversity, promote feelings of responsibility for others, or reduce prejudice. Volunteering may promote *relational* trust—that is, trust in people with whom volunteers interact when volunteering. Volunteering may also promote *trusting behavior*—that is, volunteers may successfully cooperate, and surmount problems of collective action because they are aware of each other's interests and intentions, because they share a common goal, form strategic coalitions, expect continued interaction in the future, or because they are embedded in a social network that would punish untrustworthiness.

Another caveat concerns the relatively short period of time covered in this study. It may be that volunteering effects have in fact been sown among our respondents, but that trust is such a stable trait of persons that more than 4 years are required for the seeds to come out. However, if volunteering effects on trust would emerge only after more than 4 years, such effects can hardly be due to the positive experiences as a volunteer. It would be strange if the realization 'hey, most people can indeed be trusted!' would occur only 5 years or more after a successful cooperation with co-volunteers.

A final caveat is that the estimated effects of organizational diversity and the average level of trust and education among volunteers for specific types of organizations may be underestimated because the measures were not constructed from scores of the specific co-volunteers in the specific organizations in which the survey participants volunteered. It is not the average level or heterogeneity in trust in specific types of organizations that matters but the average level or heterogeneity in trust in the specific organization in which people volunteer. The characteristics of volunteers in other organizations from the same type may not be relevant, but they are included in the measures and cloud them. With multiple observations from the same specific organization one would be able to measure the group context more accurately. Longitudinal data on a group of volunteers from the same organization are required to obtain such measures. Pending this type of research, the current data constitute a preliminary anomaly to the hypotheses of organizational diversity and group socialization.

The analyses in the current paper explain only a fraction of the variance in trust over time because changes in other characteristics of individuals have not been included. Having established that volunteering does not affect the development of generalized trust, it is important to identify conditions that do affect trust. At the macro-level, the proportion of citizens that agree that most people can be trusted correlates negatively with the level of income inequality (Uslaner 2002; Leigh 2006) and ethnic heterogeneity (Alesina and Ferrara 2000, Alesina 2002; Delhey and Newton 2005; Putnam 2007). Micro-level determinants of trust, however, have not yet been uncovered. Recent research in behavioral genetics reveals that trust measured by choices in a trust game (Cesarini et al. 2008) as well as trust measured by verbal items similar to the items used in the present study (Hiraishi et al. 2008) have only a small additive genetic component and is largely determined by non-shared environmental factors—characteristics of the environment unique to individuals. However, which characteristics of environments make people more or less trusting is unclear. This question deserves our full attention in the future.

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## Appendix

### Construction of Contextual Variables

Table 4 shows contextual data for volunteers in different types of organizations. The data were obtained by aggregating the data from the level of individual respondents to the level of the type of volunteer organizations. Column 1 shows the mean level of trust among volunteers in these organizations; column 2 shows the variance in trust. Column 3 shows the average level of education among volunteers in specific types of organizations; column 4 shows the variance in education. Columns 5–7 show the heterogeneity measures, computed as the likelihood that a randomly chosen volunteer in a specific type of organization has the same gender, religion (in five groups: non-religious, Catholic, Reformed Protestant, Orthodox Calvinist or other), and political preference (three categories: left, center, or right) as the respondent. Columns 8 and 9 show the familiarity score and the mobilization score (the likelihood of ever having been asked to volunteer).

The scores represent the average score for respondents in 12 categories: 11 types of organizations in which respondents who reported volunteering spent most of their time, and the group of non-volunteers. The categories of organizations are ranked according the average time spent per month by volunteers in these categories. This rank order was also used to assign the scores to respondents. For instance, a respondent reporting volunteering only in sports clubs received scores based on all the respondents who reported volunteering only in sports clubs. Respondents who reported volunteering for sports clubs as well as arts and culture groups received the score for sports clubs.

**Table 4** Descriptive statistics of context measures by volunteering sector

	Hours	1. Mean trust	2. Variance trust	3. Mean education	4. Variance education	Heterogeneity measures			8. Familiarity	9. Mobilization	
						5. Gender		6. Religious			7. Political
Non-volunteers	.00	3.14	.74	3.66	1.86	50.00	47.21	39.94	.38	.30	
International/refugees	13.03	3.64	.61	4.83	2.07	47.53	45.68	32.10	.50	.56	
Arts and culture	13.96	3.56	.73	4.19	2.20	49.22	30.47	35.94	.63	.50	
Education	14.60	3.24	.83	4.47	1.88	49.64	62.91	40.67	.92	.57	
Environment/nature/animals	14.60	2.64	.86	3.79	2.05	48.98	25.51	37.24	.57	.43	
Community	15.62	3.42	.74	3.47	1.87	49.64	62.91	40.67	.92	.57	
Human services	16.35	3.38	.86	3.80	1.79	39.26	63.18	43.19	.49	.42	
Health	17.67	3.15	.85	4.03	1.88	37.50	56.64	42.44	.68	.49	
Sports	18.22	3.27	.74	3.97	1.99	49.87	54.17	41.71	.94	.62	
Religion	21.44	3.48	.68	4.43	1.90	49.13	74.95	40.67	1.06	.65	
Politics/union	21.54	3.40	.74	4.53	1.89	42.86	63.33	43.32	.86	.50	
Other	28.60	3.39	.72	4.06	1.94	49.53	72.00	40.88	.85	.53	

Note that these variables are constructed from scores among all the volunteers in specific types of organizations, and not from scores of the specific persons in the specific organizations in which the survey participants volunteered.

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