

# Lost Letters in Dutch Neighborhoods: A Field Experiment on Collective Efficacy

Beate Volker, *University of Amsterdam*

Gerald Mollenhorst, *Utrecht University/Stockholm University*

Wouter Steenbeek, *Netherlands Institute for the Study of Crime and Law Enforcement (NSCR)*

Veronique Schutjens, *Utrecht University/ University of Amsterdam*

Henk Flap, *Utrecht University*

**A** lack of collective efficacy in neighborhoods is associated with social and physical disorder and related anti-social actions. It is less clear, however, whether collective efficacy in neighborhoods also enhances *prosocial, other-regarding* behavior. We studied this association by employing the Lost Letter Technique in a large-scale field experiment. Our data stem from 1,240 letters dropped in a representative sample of 110 Dutch neighborhoods, combined with neighborhood data based on a survey of residents (SSND2,  $n = 996$ ) and information provided by Statistics Netherlands. We distinguish between two conditions: (1) location of the lost letter, that is, behind a car's windshield wiper or on the sidewalk; and (2) type of addressee, that is, a Dutch name or a Turkish/Moroccan name. When we decompose collective efficacy into social cohesion and shared expectations of social control, we find that shared control expectations clearly matter for the rate of posted letters. Social cohesion has no effect. Furthermore, a high percentage of non-Western residents, high residential mobility, and a relatively low local income level are negatively related to the rate of posted letters.

## Introduction

The study of neighborhoods has long been of interest to sociologists. From the Chicago School to the work of [William J. Wilson \(2012\)](#), neighborhood research is an important lens through which to understand individual well-being. Neighborhoods are often studied as a condition for individuals' satisfaction with life ([Lee and Guest 1983](#)), career prospects ([Wilson 1996](#)), and health (e.g., [Kawachi and Berkman 2003](#); [Mohnen et al. 2011](#)). In addition, there has been a host of studies on the influence of neighborhood conditions on deviant behavior and crime. [Shaw and McKay \(1942\)](#)

*Please address correspondence to Beate Volker, Department of Sociology, University of Amsterdam, Nieuwe Achtergracht 166, 1018 WV Amsterdam. This research was made possible by a medium investment grant of the Dutch Science Foundation (NWO, 480-08-010; for the 1st and 4th author); and a grant within the Innovational Research Incentives Scheme (VENI 451-12-011 for the 3rd author).*

were among the first to show that structural characteristics of neighborhoods are associated with other social aspects of neighborhoods. They developed the influential theory of social disorganization and argued that, before all, three structural neighborhood conditions, that is, ethnically heterogeneous composition, high residential mobility, and low income, are associated with community disorganization, which in turn influences criminal behavior. Succeeding generations of researchers consequently included these conditions as part of their arguments and empirical analyses.

Since the 1970s, social disorganization has been perceived as a community's inability to realize common values and maintain social control (Bursik 1988; Sampson and Groves 1989). More recently, Sampson (e.g., Sampson, Raudenbush, and Earls 1997) argued that the mechanism through which these conditions become effective is related to people's relationships in their neighborhoods. Social cohesion and the shared belief that neighbors will intervene on behalf of the common good — so-called collective efficacy — are associated with low rates of crime, ranging from burglaries to violent offenses and even murder. Sampson, Raudenbush, and Earls (1997) showed that this association is mediated by collective efficacy. Collective efficacy seems to hamper the occurrence of collective bads (see, e.g., Sampson, Raudenbush, and Earls 1997; Morenoff, Sampson, and Raudenbush 2001). Given the implication of collective efficacy, that is, the shared belief that residents will intervene on behalf of the common good, it is surprising that it is not yet clear whether collective efficacy in a neighborhood also stimulates the production of collective goods, that is, encouraging prosocial action.

Does collective efficacy matter for interventions in public spaces and contribution to the common good? More specifically, we study whether collective efficacy enhances “other-regarding behavior.”<sup>1</sup> We set up a large-scale field experiment and employed the Lost Letter Technique (Milgram, Mann, and Harter 1965). Stamped envelopes were dropped in 110 Dutch neighborhoods, half of them on sidewalks and half of them behind cars' windshield wipers. In addition, half of the letters were addressed to a foreign (Turkish/Moroccan) name, whereas the other half of the letters were addressed to a common Dutch name. Our research question is straightforward: *To what extent do structural neighborhood conditions and collective efficacy in neighborhoods explain the variation in socially desirable actions, specifically in terms of the rate of “lost letters” posted?*

## Human Agency through Collective Efficacy?

The argument that collective efficacy has an effect on a variety of social outcomes is based on Bandura's psychological theory of individual-level “personal efficacy” — the belief in goal attainment through own actions (Bandura 1997, 2000). While acknowledging the fact that no individual lives his life with complete autonomy, arguments explaining individual agency have also been applied to collective agency: the shared belief in collective power to attain a desired goal is at the core of collective efficacy.

In sociology, Sampson, Raudenbush, and Earls (1997) applied the idea of collective efficacy to the study of crime and disorder in neighborhoods. They found that collective efficacy substantially mediates the association between structural neighborhood conditions — such as ethnic heterogeneous composition of the

population, high poverty, and high residential mobility — and crime, and that, in addition, local friendship and kinship ties, organizational participation, and access to neighborhood services are positively associated with collective efficacy. Other scholars, however, have questioned whether trust and cohesion are necessary constituents of collective efficacy in all circumstances (cf. *St. Jean 2007*). The shared belief that people will intervene may be sufficient to stimulate action on behalf of the common good, in our case, common goods in the neighborhood.

## The Lost Letter Technique in a Field Experiment

The Lost Letter Technique was developed by Milgram, Mann, and Harter (1965; see also *Fazio and Gromoll 1971*) and designed to measure people's orientation toward political groups or other organizations and more generally how alleged attitudes relate to behavior. In the original study, 400 stamped letters were dropped in different districts of New Haven, Connecticut. The general assumption was that finders would be more inclined to post the letter if their attitudes corresponded with the assumed attitudes of the addressee. Four types of addressees were written on the envelopes: "Friends of the Communist Party"; "Friends of the Nazi Party"; "Medical Research Association"; and a private address, that is, "Mr. Walter Carnap." The overall rate of posted letters was 48 percent, with large differences between the types of addresses: 72 percent and 71 percent of the letters with the address of a medical institution and a private address, respectively, as opposed to a rate of 25 percent for political parties. Since the first publication of this technique, it has been applied in a variety of studies with diverse research questions, ranging from political opinions in voting wards to responses to cards printed with socially controversial issues, such as names of certain politicians (*Shotland, Berger, and Forsythe 1970*), legalization of marijuana (*Georgoff, Hersker, and Murdick 1972*), homosexuality (e.g., *Levinson, Pesina, and Rienzi 1993*; *Waugh, Plake, and Rienzi 2000*), and busing of black children to white schools (*Bolton 1974*). Rates of posted letters differed considerably, ranging from approximately 5 (*Levinson, Pesina, and Rienzi 1993*) to 75 percent (*Waugh, Plake, and Rienzi 2000*).

The use of the Lost Letter Technique is an example of experimental field research studying actual behavior. Recently, two studies were published that addressed research questions that are comparable to our questions: *Koopmans and Veit (2014)* and *Sampson (2012)*. Sampson conducted an experiment in one American city, Chicago. The addresses were not varied in terms of ethnicity, but contained an American name (i.e., "Mary Jones") or a company (i.e., "Universal Services"; see *op. cit.* 218). *Koopmans and Veit (2014)* focused on the degree to which ethnic mix impacts the posting of letters. They did not inquire into control expectations or cohesion, but focused on the impact of the address on the letter. Their research site was one city: Berlin, Germany. Koopmans and Veit studied large neighborhoods of between 12,000 and 150,000 residents. The rate of posted letters in Sampson's study was approximately one-third. *Koopmans and Veit (2014)* found a higher rate of nearly two-thirds, and the rate of posted letters was clearly lower when the ethnic mix was higher.

Our study applied the Lost Letter Technique to examine socially desirable behavior in a representative sample of Dutch neighborhoods. Based on a survey of

these neighborhoods, we also gathered information on attitudes regarding the collective efficacy of the neighborhood residents. In the field experiment, we varied the ethnicity of the addresses and the place where the letters were dropped (see below). Our study can be viewed as a replication of Sampson's (2012) study but with the aforementioned important difference of studying the effect of the addressee's name and applying the technique in a nationally representative neighborhood sample. It also can be viewed as a replication of Koopmans and Veit (2014), but we investigated in addition the effect of collective efficacy, rather than only ethnic diversity, on the rate of posted letters. For the social sciences, replication of surveys in new settings and with the inclusion of important additional conditions is crucial for arriving at reliable conclusions (Firebaugh 2008; see also Watts 2014).

Table A1 (see supplementary material online) in the appendix provides a comprehensive overview of these studies and other studies that applied the Lost Letter Technique. Note that different quasi-experimental conditions often showed no effect. The most interesting findings are the differences in overall rates of posted letters. When the address of the receiver is associated with a socially controversial issue, such as homosexuality, homelessness, or extreme political parties, rates of posted lost letters are particularly low. The table shows that the Lost Letter Technique has been widely used to inquire into people's attitudes and willingness to provide small favors given a certain context. Very few studies have inquired into area-specific characteristics that might influence the likelihood of a letter being posted. In addition, even fewer studies specify theoretical arguments about why letters should be posted.

## From Which Neighborhood Will Lost Letters Be Posted? Arguments and Hypotheses

A person who finds a stamped and signed letter has three possible responses: (1) do nothing, (2) throw the letter in a garbage can, or (3) drop the letter in a mailbox. Options 1 and 2 cannot be distinguished here: we were able to record only letters that were posted. We assume, however, that Option 2 does not occur often because there is no great difference in the effort required to throw a letter into a garbage container (Option 2) and to drop it in a mailbox (Option 3). Option 3, mailing the letter, indicates other-regarding, prosocial action in the neighborhood; people may assume that the letter was lost by a neighborhood resident.

This situation resembles a volunteer's dilemma (Diekmann 1985); volunteering comes often at a small cost to the volunteer, and one single actor is sufficient to produce the public good. However, if no one acts, all participants will lose. In this study, making the small sacrifice of bringing the lost letter to a mailbox contributes to both social order — the letter has been sent — and physical order — the street is cleaner. This behavior conforms to the Kantian norm that one will treat others in the same way as one wants to be treated by others. This type of behavior solves the volunteer's dilemma (Diekmann 1985, 608) and indicates generalized reciprocity expectations and responsibility. Collective efficacy, the belief that the residents of the neighborhood, and in fact all members of society, can and will intervene on behalf of the common good, might stimulate actions that are in line with this imperative. In the current study, the public good is living in a neighborhood where you can assume that the residents would post a letter that you have lost.

What are the characteristics of the neighborhoods from which letters will be posted? Our basic expectation is that the rate of posted letters will be relatively high in neighborhoods with high *collective efficacy*.<sup>2</sup> A neighborhood that is high in collective efficacy provides cues for people who walk the streets (see Lindenberg 2012), which activates norm-conforming behavior.

As mentioned above, there are three neighborhood conditions that are positively correlated with all types of neighborhood problems: high residential mobility, ethnic heterogeneity, and low income all decrease the likelihood of other-regarding behavior.

Living in a neighborhood with high *residential mobility* hampers residents' formation of relationships with one another and with the neighborhood as a whole; thus, people will simply care less about a clean street or one another.

Putnam (2007) explicitly argued that *ethnic heterogeneity* diminishes all types of social participation and other-regarding behavior. People in ethnically mixed neighborhoods withdraw from all types of participation in social activities (the so-called "turtle effect"). In the past decades, the body of research that argues for the undesirable outcomes of group heterogeneity (typically in terms of ethnicity) has considerably grown; see, for example, Alesina and La Ferrara (2000); Alesina, Baqir, and Easterly (1999). Although we are aware that this statement and the evidence in other settings received much criticism (see Van der Meer and Tolsma 2014; Kesler and Bloemraad 2010), we inquire into this idea by hypothesizing a negative influence of ethnic heterogeneity on the likelihood that a lost letter will be posted.

Regarding the level of *poverty*, there is a fairly consistent finding that social disorder is high in disadvantaged areas with low economic welfare. Massey (1996) argued that the concentration of poverty erodes many types of public order and thereby creates alienation. Residents of low-income neighborhoods might not have the resources needed to invest in collective goods. It is likely that collective goods are simply less important to pursue if a person lacks important individual goods, such as work, the ability to pay the rent, and sufficient money to live a reasonably comfortable life. Following this idea, we expected that fewer lost letters would be posted in neighborhoods with many low-income residents than in richer neighborhoods.

Similar to the study on neighborhood disorder (Sampson, Raudenbush, and Earls 1997), we also expected the effects of these structural conditions on neighborhood order (i.e., prosocial, other-regarding behavior) to be *mediated by collective efficacy*. In other words, we expected that a portion of the influence of structural conditions, such as low income on the rate of posted letters, can be attributed to low collective efficacy.

We also expected that the *temporal and relational embeddedness* of residents would affect the likelihood of letters being posted (see also Coleman 1990). That is, first, people who are anticipating a short stay in a given neighborhood are less likely to invest in collective goods. Hence, we expected that in areas where many people plan to move, fewer letters would be posted. Second, with regard to relational embeddedness, having a vivid network of close, trustful relationships in the neighborhood increases investment in local collective goods; hence, we expected that more lost letters would be posted in neighborhoods where many people maintain relationships with one another.

Following the line of reasoning of the volunteer's dilemma, the context in which the letter is found was expected to impact whether a letter was posted. One can expect that letters will be posted more often if the perceived costs are lower. Sending a letter to a person who belongs to a controversial social category can be regarded as more costly than sending it to a person who belongs to a socially accepted category. We varied the address of the recipient on the letter: letters were addressed with either a very common Dutch name or a Turkish/Moroccan name. As Milgram stated: "The more diverse a society, the more likely the differences in return rates of letters relevant to social issues. In an extreme case where a country has polarized into hostile camps, neither side will mail any letters for the other" (Milgram 1977, 300). Hence, we expected that the rate of posted letters will be highest when the (alleged) ethnicity of the addressee corresponds to the majority ethnic group in the neighborhood.

Moreover, a person is considerably more likely to help if she/he is directly asked (see, e.g., Varese and Yaish 2000). A letter on the sidewalk might not elicit an inclination to act in any individual. However, if one finds a letter on his/her private property, he/she cannot ignore the responsibility to make a decision. We varied the degree to which help was asked, either relatively directly, by placing half of the letters behind a person's car windshield wipers, or indirectly, by dropping the other half of the letters on the sidewalks. If the letter was fixed behind the wiper, a pencil-written note was added: "found next to your car." We expected that letters placed behind the *windshield wipers* would be posted more often than letters dropped on the sidewalk. An additional reason for including the windshield wiper letter was that the chance of genuine neighborhood inhabitants finding the letter would be high, as parked cars often belong to people who live in the neighborhood.

Table 1 provides an overview of the hypotheses.

**Table 1. Overview of Hypotheses about Posted Letters in Neighborhoods**

No.	Neighborhood/letter characteristic	Expected influence on posting the letter
1	Collective efficacy	+
2	Structural neighborhood conditions: high residential mobility, poverty, and high proportion of non-Western residents	-
3	Mediation effect of collective efficacy on structural neighborhood conditions	Effect of neighborhood conditions weaker
4	Relations and temporal embeddedness: good quality of local relationships and no intention to leave the neighborhood	+
5	Placement of letter and address: sidewalk/Turkish/Moroccan surname	-
6	Interaction: high proportion of non-Western residents $\times$ Turkish/Moroccan surname on letter	+



## Measurements and Methods

### *Design of the Lost Letter Study*

As mentioned, the Lost Letter Technique was applied to measure collective good production in neighborhoods. In posting a letter, a person shows the willingness to help another person, presumably an individual from the neighborhood. The rate of posted letters per neighborhood constitutes a proxy of social behavior toward collective good production at the neighborhood level. The Lost Letter Technique has some limitations, of which the lack of control of the process of posting and the absence of information on the finder are the most important. Important advantages are, however, that it is an unobtrusive behavioral measurement, where real actions are counted straightforwardly (see Milgram, Mann, and Harter 1965).

We dropped 1,240 letters in 110 neighborhoods where we also interviewed people about their social networks and neighborhood (see the next section). The letters were dropped in the same period in which the survey was conducted. In each neighborhood, one-half of the letters were dropped on the sidewalk and the other half were fixed behind a parked car's windshield wipers. The address of the sender, located on the back of the envelope, was only a postal code and a house number, enabling the post office to return the letter to the sender, which is common in the Netherlands. This postal code referred to the address of one of our team members.<sup>3</sup> Half of the letters were addressed to a common Dutch name (Tom Jansen), and the other half to a Turkish or Moroccan name (Mehmet Demir). All the letters were stamped and closed, and they all contained a note stating that a meeting scheduled for next week would be postponed.

The text was typed in Dutch or the foreign language, in accordance with the name of the recipient. The address of the recipient was a street in the city of Utrecht in a neighborhood not belonging to the sample. Table 2 summarizes the field experimental conditions.

### *The Survey of the Social Networks of the Dutch—SSND*

The survey data used for this study were gathered in 2007–2008 in the Survey of Social Networks of the Dutch 2 (SSND2). These data are part of a larger research project and contain the most detailed information on personal networks that exists in the Netherlands. The SSND2 is the second wave of the SSND project, which started in 2000. The SSND focuses on personal networks, neighborhoods, and work. Forty of a total of approximately 500 Dutch municipalities were sampled, representing the different Dutch provinces and regions and taking into

**Table 2. Overview of Quasi-Experimental Conditions**

Addressee surname on letter	Place where letter is dropped	
	Sidewalk	Car's windshield wiper
Dutch	310	310
Turkish	310	310

account differences in the number of inhabitants per municipality. Subsequently, four neighborhoods were randomly sampled in each municipality (Volker and Flap 2002).

In the SSND1, 1,007 respondents in 161 neighborhoods were interviewed in 1999–2000, with response rates varying across neighborhoods between 35 and 80 percent. In the SSND2, 7–8 years later, we located approximately 850 of the original respondents (the others could not be traced), of which 604 agreed to be interviewed. In addition, a new sample of 394 respondents in the same neighborhoods were interviewed in order to maintain stable sample sizes per neighborhood. The overall response rate was 40 percent for the SSND1, 40 percent for the SSND2 new sample, and 71 percent for the SSND2 panel. For the analyses of this paper, SSND2 data were used and we applied a slightly different neighborhood delineation, which resulted in 110 neighborhoods (see the section on neighborhood delineation below). We did not find a pattern of selective non-response in the second wave.

### ***Neighborhood Delineation***

Postal areas in the Netherlands are divided into 4-, 5-, and 6-digit areas, with 6 digits (4 numbers and 2 characters, e.g., 3512HE) being the smallest areas and comprising approximately 30 addresses. An intriguing fact is that these areas rather closely resemble actual neighborhoods because digits change with physical barriers; for example, if a channel or a larger street has to be crossed. Originally, the postal codes in the Netherlands were designed so that postmen easily could walk their route.

The spatial units in the original SSND design are 5-digit postal code areas (Dutch postal codes have 6 digits),<sup>4</sup> representing an area of 2–3 streets. For this article, we used 4-digit postal codes delineating larger areas with, on average, 3,500 addresses, because macro-level information was easier to access for these units. Note that this does not exclude units from the sample; it merely restructures the delineation of neighborhoods and combines adjacent 5-digit postal code areas to achieve a total number of 110 neighborhoods. Furthermore, the use of 4-digit postal code areas as the units of analysis increased the number of respondents on which information on collective efficacy in the neighborhood is based. In the final analyses, we used 110 Dutch neighborhoods, and we used survey data from 998 respondents; that is, an average of nine respondents per neighborhood. We are aware that the number of respondents per neighborhood is not large, but it has been shown that even in cases with a few units per group (e.g., only two, as in cases of the analyses of marriage couples), sufficient reliability can be established (see Raudenbush 2008), particularly if effect sizes are sufficiently large.

### ***Macro-Level Data on Neighborhoods***

The information about the characteristics of the neighborhoods in our sample, that is, the data “Key figures of neighborhoods,” was provided by Statistics Netherlands. These data are based on census data and aggregated to the neighborhood level and can be downloaded via [cbs.nl/statline.nl](http://cbs.nl/statline.nl).



## Measurements

### Dependent variable

The dependent variable is the posting of a letter. Letters were coded 0 = not posted and 1 = posted.

### Independent variables

*Letter characteristics:* sidewalk (coded 0) or windshield wiper (coded 1). A Dutch name in the address was coded 0, and a Turkish name was coded 1.

### Structural neighborhood conditions

Ethnic heterogeneity was measured as the percentage of non-Western migrants among neighborhood residents.<sup>5</sup> Income was measured in quintiles from low (1) to high (5).<sup>6</sup>

Residential mobility was measured as the number of persons who moved into or out of the neighborhood (per 1,000 inhabitants).<sup>7</sup>

Ten items measured *shared expectations of social control*. The items are very similar to the items employed by Sampson, Raudenbush, and Earls (1997):

“Do you expect that people from this neighborhood will intervene if:

1. Children are hanging around and playing truant
2. Adolescents are spraying graffiti
3. People are having a loud argument here in the street
4. One observes a burglary
5. A person walking around and fiddling with another person’s car
6. Children quarreling and fighting in the street
7. The municipality plans to open a center for drug addicts here
8. The playground is planned to be destroyed and replaced with something else
9. Benches in the public garden are planned to be destroyed
10. A dancing club is planned to be opened in this neighborhood.”

These items constitute a scale with a Cronbach’s alpha of .80. Part of the scale measures social control (items 1–6), and another, highly correlated part (items 7–10) focuses on the degree to which people care for their neighborhood and want to preserve the environment as it is.

In addition, we constructed a scale of *neighborhood cohesion* based on residents’ responses to statements concerning the degree to which (1) relations with neighbors are generally trusting and (2) the neighborhood is cohesive. The wording of the items is “The residents of this neighborhood trust each other,” “This is a close-knit neighborhood,” and “People in this neighborhood have good contact with each other.” At the individual level, these items constitute a scale with a Cronbach’s alpha of .79. At the neighborhood level, the reliability of this measurement is .62 for the cohesion scale and .67 for the shared control expectations scale.<sup>8</sup> All items are formulated as statements, with respondents rating their level of agreement on a 5-point scale.

When constructing the measurement of *collective efficacy*, we first aimed at combining these items with items of trust and neighborhood cohesion. However, in the Netherlands, the shared expectations of social control are not highly correlated with trust in neighbors or quality of neighborhood relations in general; the correlation between shared control expectations and neighborhood cohesion in the Netherlands is approximately .50, which is much lower than the correlations found in the United States (see Sampson et al. 1997).

### Control variables

There were two potentially important confounding conditions: the distance to the next mailbox and the weather. Both conditions can be expected to influence the effort undertaken to post the letter. The Dutch postal service provides information on the closest mailboxes per postal code. We constructed a measurement indicating the walking distance to the three nearest mailboxes using Google maps. This distance varied between 10 and 3,500 meters and was recorded in seven equal categories. Average distance to a mailbox in the Netherlands is approximately 270 meters. In addition, we controlled for the weather, particularly for rain on the day of dropping, average temperature, and wind force. This information was gathered by the KNMI (Royal Dutch Institute of Meteorology), the official institute that monitors weather and climate. Furthermore, we controlled for the different numbers of letters dropped per neighborhood in the analyses.

Finally, because the chance of a person coming across a “lost letter” is greater in densely populated areas, we accounted for urban and rural neighborhoods by including a measurement for the number of people within 1 km<sup>2</sup> (on a 5-point scale, with higher values indicating more addresses: 1 = less than 500 addresses per km<sup>2</sup>, 2 = between 500 and 1,000 addresses per km<sup>2</sup>, 3 = between 1,000 and 1,500 addresses per km<sup>2</sup>, 4 = between 1,500 and 2,500 addresses, and 5 = more than 2,500 addresses per km<sup>2</sup>). Note that population density can operate in two directions. First, as mentioned, density enhances the chance of persons coming across the letter. Second, arguing more in line with early Chicago School scientists such as Louis Wirth (1938), one would expect that urban residents show less other-regarding behavior than rural residents.

### The measurement of shared control expectations and cohesion at the neighborhood level

To assess the shared control expectations in Dutch neighborhoods, SSND2 data were aggregated to the neighborhood level. A straightforward procedure of aggregation is the calculation of the average (or the standard deviation) of the items measured at the individual level for each neighborhood (see also Cummins et al. 2005). This procedure, however, does not take into account that there are fundamental differences in measuring individual-level variables and measuring variables at a higher level. First, variables that measure neighborhood characteristics, such as the shared control expectations variables, are based on individual perception, which might be influenced by the characteristics of the respondent. For example, women or older people might be more likely to assume that people

are willing to exert control than are men and younger people. Second, the reliability of the aggregated measurement differs across neighborhoods because of the different numbers of respondents per neighborhood (in our case, between 3 and 18). Third, the items that measure collective efficacy are not independent of each other; rather, they are nested within respondents. In other words, answers on one item are likely to be associated with answers on another item. The econometric procedure proposed by Raudenbush and Sampson (e.g., 1999; see also Mujahid et al. 2007) solves these problems by accounting for individual differences in response to certain items, differences in the number of respondents on which estimations are based, and dependency among the items that measure shared control expectation. It accounts for the nesting of items within individuals while including the neighborhood level in the analysis, which results in a three-level model: neighborhoods, individuals, and items of the scale for control expectations and for neighborhood cohesion.

We accounted for four individual characteristics that can be expected to influence the perception of neighborhood collective efficacy: sex, age, education, and non-Western origin. In the first step of the analysis, neighborhood shared control expectations were estimated by a three-level model, with neighborhood, respondents, and items of the scale as levels. The residuals of the neighborhood measurement, that is, the part that could not be attributed to response patterns arising from individual characteristics, constituted the shared willingness to intervene measurement for the final analyses in the second step, when the hypotheses were tested. In this second step, the econometric-based shared control expectations measurement was used as an independent variable in a two-level logistic model with a binary indicator of posted letter (dependent variable).

The average reliability of our econometric-based neighborhood shared control expectations measurement was .67. The interpretation is similar to a Cronbach's alpha in psychometrics scale analysis, although the values are typically somewhat lower than those of psychometric scales. Values above .60 are considered to be adequate (Moss et al. 1998). The correlation at the neighborhood level between the aggregated control expectation measure and the econometric-based measure was .87. A similar procedure was applied to establish cohesion and trust at the neighborhood level (hereafter, neighborhood cohesion). The reliability of both econometric scales was established as follows (see Raudenbush, Rowan, and Kang 1991, 312):

$$\alpha = \frac{\sigma_{neighborhood}^2}{\sigma_{neighborhood}^2 + \frac{\sigma_{individual}^2}{n_j} + \frac{\sigma_{item}^2}{\rho \times n_j}},$$

where  $\sigma^2$  = variance at the different levels, neighborhood, individual, and item;  
 $n_j$  = number of individuals in neighborhood  $j$ ; and  
 $\rho$  = number of items in the scale.

The estimated models were binomial multilevel models; the analyses were performed in MLWin 2.1. All variables were centered around the mean. The presented coefficients are estimated via the IGLS (iterated generalized least squares) method.

**Table 3. Descriptive Statistics of Key Variables ( $n = 1,240$  letters in 110 neighborhoods)**

	Mean (sd)	Min-max
Letter characteristics		
Posted letters	.69 (.460)	0–1
Foreign address	.50 (.500)	0–1
Windshield wiper	.50 (.500)	0–1
Structural neighborhood characteristics		
Residential mobility	95.50 (45.31)	.00–256.00
Income Q1	.31 (.039)	.22–.46
Income Q2	.18 (.045)	.07–.30
Income Q3	.17 (.030)	.09–.25
Income Q4	.17 (.031)	.11–.26
Income Q5	.17 (.066)	.04–.34
% non-Western residents	4.50 (8.30)	.00–54.0
Shared control expectations		
Control expectations <sup>a</sup>	1.97 (.296)	1.50–3.40
Control expectations (ecometrics)	–.12 (.881)	–1.96–2.65
Temporal and relational embeddedness		
Intention to leave (1–5)	3.91 (.421)	2.57–4.80
Neighborhood cohesion (1–4)	2.60 (.400)	2.00–4.00
Control variables		
Distance to mailbox (in meters to be walked, recoded into 7 categories)	3.99 (2.00)	1–7
Weather (rain, in liter/m <sup>2</sup> )	.77 (1.85)	0–10
Temperature (degrees Celsius)	8.00 (5.37)	–1.2–29.2
Speed of wind	4.50 (2.40)	1–12
Population density	3.12 (1.51)	1–5

<sup>a</sup>Presented only for illustrative purposes; in the analyses, the econometric version of control expectation was used.

Table 3 provides a summary of the variables used in the analyses; the correlations among these variables are presented in table A2 in the appendix (see supplementary material online).

## Results

### *Descriptive Results*

Of the 1,240 letters dropped, approximately 70 percent ( $n = 863$ ) were posted. Interestingly, 5 percent of the letters had been opened. In addition, a few of those who posted the letter wrote their own address and name on the letter.

In line with our expectations, the number of posted letters varied clearly across neighborhoods. In the multilevel analyses, reported below, about 11 percent of the variance in posted letters was attributed to differences in neighborhoods, which represents a relatively strong neighborhood effect. The highest proportion of letters was posted in the town of Abcoude (97 percent) and the city of Voorburg (94 percent), and the smallest proportion was posted in the cities of Maastricht (45 percent) and Tiel (50 percent).

Letters fixed behind a car's windshield wipers were posted less often than letters dropped on the sidewalk, which contradicted our expectations. There was only a small difference in the rate of posting between Dutch and Turkish addressees; thus, the overall rate of sent letters was not affected by whether the letter was addressed to an apparent immigrant or to a person who would seem to be native Dutch. Table 4 summarizes the results related to these two conditions.

### Explanatory Analyses

We tested our hypotheses with multilevel binomial regression analyses, summarized in table 5. As stated above, the likelihood of a lost letter being posted differed across neighborhoods. Model 1 shows that there was no association between the control variables and the likelihood of letters being posted. In model 2, we added shared control expectations to the analysis, which were clearly and positively associated with the likelihood of letters being posted. Controlling for weather, population density, and distance to mailbox, the odds of posting a letter are 1.34 (=  $\exp .296$ ; see model 2 in table 5) times higher per unit increase of shared control expectations. If we compare neighborhoods with high and low control expectations (defined as one standard deviation above and below the mean), the odds of posting a letter in a neighborhood with high shared control expectations are ( $\exp(.881 \times 2 \times .296) =$ ) 1.68 times higher than in a neighborhood with low shared control expectations. In model 3, structural neighborhood characteristics were added and shared control expectations were removed. In particular, the percentage of people in the second income quintile was negatively associated with the likelihood that a letter was posted. Furthermore, the percentage of non-Western

**Table 4. Posted Letters by Place of Dropping and Addressees' Surname (n, row % of total)**

Place where letter is dropped	Posted		
	No	Yes	Total
Sidewalk	159 (25.6)	461 (74.4)	620 (100%)
Windshield wiper	218 (33.2)	402 (64.8)	620 (100%)
Odds ratio: 0.636	377 (30.4)	863 (69.6)	1,240 (100%)
<b>Posted letters by addressees' surname (n, % of total)</b>			
Name of addressee			
Dutch	177 (28.5)	443 (71.5)	620 (100%)
Turkish/Moroccan	200 (32.3)	420 (67.7)	620 (100%)
Odds ratio: 0.839	377 (30.4)	863 (69.6)	1,240 (100%)

**Table 5. Multilevel Binomial Regression Models for likelihood of a letter to be posted ( $n = 110$  neighborhoods and 1,240 letters, coefficient, SE)**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant (se)	.810*** (.085)	.823*** (.084)	.857*** (.080)	.867*** (.079)	1.25*** (.125)	.867*** (.078)	1.21*** (.126)
N letters dropped in a given neighborhood	.009 (.014)	-.003 (.013)	-.003 (.013)	-.003 (.013)	-.004 (.014)	-.004 (.014)	-.004 (.014)
Population density	.090 (.089)	.018 (.093)	-.315** (.134)	-.377** (.132)	-.358** (.133)	-.363** (.134)	-.363** (.134)
Rain	-.136 (.090)	-.136 (.089)	-.149 (.089)	-.150 (.088)	-.154 (.089)	-.151 (.087)	-.154 (.089)
Distance to mailbox	-.050 (.067)	-.054 (.067)	-.085 (.067)	-.092 (.067)	-.086 (.067)	-.102 (.068)	-.102 (.068)
Temperature	-.005 (.090)	.007 (.089)	.011 (.086)	.022 (.085)	.031 (.086)	.031 (.085)	.031 (.086)
Wind	.042 (.100)	.040 (.099)	.034 (.099)	.028 (.097)	.039 (.099)	.038 (.097)	.039 (.099)
Shared control expectations	-	.296*** (.088)	-	.286*** (.082)	.305*** (.090)	.308*** (.089)	.308*** (.090)
% non-Western residents			-.305** (.103)	-.295** (.101)	-.327** (.108)	-.322** (.107)	-.410*** (.125)
Residential mobility			-.235** (.101)	-.248** (.099)	-.247** (.099)	-.243** (.098)	-.247** (.100)
Income: 1 <sup>st</sup> quintile			.225 (.151)	.216 (.149)	.221 (.149)	.224 (.151)	.225 (.151)
Income: 2 <sup>nd</sup> quintile			-.295+ (.152)	-.279+ (.152)	-.280+ (.152)	-.284+ (.154)	-.285+ (.154)
Neighborhood cohesion					-.052 (.103)	-.051 (.101)	-.051 (.103)



Intention to leave	-.062 (.082)	-.061 (.080)	-.062 (.082)	-.062 (.082)
Foreign surname		-.186 (.127)	-.285 <sup>+</sup> (.146)	
Windshield wiper		-.475 <sup>***</sup> (.128)	-.476 <sup>***</sup> (.128)	
Interaction: % non-Western residents × Turkish surname on address				.162 (.121)
Variance ( $\mu_{oi}$ )	.401 (.114)	.372 (.110)	.233 (.094)	.213 (.093)
-2 log likelihood	1561.31	1553.77	1522.82	1511.86
ICC	.108	.101	.072	.066
				1481.02
				.060
				.061

<sup>+</sup>  $p < .10$  <sup>\*\*</sup>  $p < .01$  <sup>\*\*\*</sup>  $p < .001$ . For income, the first two quintiles are contrasted with the other three.

residents in neighborhoods and residential mobility were negatively associated with letters being posted. Mobility seems to distort other-regarding behavior. Model 4 investigates whether shared control expectations are also a mediator. However, the estimates of the structural neighborhood conditions did not change remarkably. In model 5, indicators for structural and relational embeddedness were added. Interestingly, there was no association between these indicators and the odds of a letter being posted. Neighborhood cohesion also did not affect the odds that a letter was posted. Although this result is in line with the moderate correlation between cohesion and control expectations, it is surprising and differs from findings established in other national contexts, such as the United States.

Model 6 tested the hypotheses concerning the influence of a letter's place of dropping and the ethnicity of the addressee. Contrary to our expectation, letters dropped on the sidewalk had a higher chance of being posted. There was no main effect of the addressee's ethnicity. In model 7, we tested whether in neighborhoods with a high percentage of non-Western residents more letters with the foreign name were posted, which was not the case. There was, however, a weak negative main effect of the addressee's name on the chance that the letter was posted in this last model.<sup>9</sup>

In the estimated models, the intra-class coefficient, expressing the degree of similarity between micro units belonging to the same macro unit, varied between .061 and .108. This indicates that roughly between 6 and 11 percent of the variation in posted letters was due to neighborhood characteristics.<sup>10</sup> Even when controlling for a number of characteristics at the

neighborhood level, the average correlation of the likelihood of being posted was higher for letters dropped in the same neighborhood than for letters dropped in different neighborhoods.

Shared expectations of social control were a robust predictor of letters being posted in all the models we tested. In the last model, which controlled for all other factors, the odds of posting a letter in a neighborhood with high shared control expectations (defined as one standard deviation above the mean) are 1.72 times higher than in a neighborhood with low shared control expectations ( $\exp(0.881 \times 2 \times 0.308)$ ).

## Conclusion and Discussion

### *Main Findings*

This research leads to a number of new findings and conclusions. We showed that neighborhood-level expectations of social control not only seem to dampen socially undesirable outcomes such as crime and littering, but also enhance the likelihood of socially desirable outcomes; that is, other-regarding behavior. The odds of a lost letter being posted are higher in neighborhoods with high control expectations than in neighborhoods with low expectations. Furthermore, in neighborhoods with lower income residents, higher ethnic mix, and with more residential mobility, fewer letters are posted. As hypothesized, in neighborhoods where residents lack resources, less room is left for caring for others, in particular for unknown others. With increasing population density, the chance of a letter being posted decreases. Population density enhances anonymity, as posited by scholars of the early Chicago School.

The finding that in neighborhoods with more ethnic mix the odds for a letter to be posted are lower is in line with the expectations of Milgram (1977, 300) and the results of [Koopmans and Veit \(2014\)](#) in Berlin, Germany. However, [Sampson \(2012\)](#) found no effect of heterogeneity in Chicago. Effects of diversity are apparently not the same across locations (see also [Van der Meer and Tolsma 2014](#)) but differ across settings and institutional contexts. Future research should conduct systematic inquiries into these differences.

Importantly, the rate of posted letters (70 percent) in the current study is relatively high compared to other studies: [Sampson \(2012, 218\)](#) reported that approximately one third of letters were posted. [Hampton's \(2001\)](#) cross-country comparative study found that in the city of Amsterdam, 65 percent of letters were posted, which was the highest score among the participating countries. One reason for these differences might be that the Dutch live in a cycling and walking culture, which makes it more likely that they will notice and post lost letters, compared to individuals in a culture where many people use a car. The residents of Berlin in the study of [Koopmans and Veit \(2014\)](#) live in a rather similar culture, and the rate of posted letters in their study was also relatively high, though still lower than our rate.

Interestingly, the quality of relationships among neighbors and the cohesion of the neighborhood did not influence the chance of a letter being posted. This finding contradicts research done in the United States. It is, however, in line with [Sampson's \(2002, 220\)](#) argument that for intervention, strong relations are not a necessary condition: "strong personal ties are not the key to understanding in this

theoretical framework. Many a powerful organization, university, or even society is held together by norms of action rather than personal bonds.” For the Netherlands, trust and cohesion are no necessary conditions for interventions on behalf of the collective good. Again, future research should further inquire about country differences in this regard.

The finding that letters behind the windshield wiper were less often posted might be due to the fact that helping in this case is uncomfortable: people have to get out of the car to drop the letter into a mailbox, take another route, and so forth. In addition, in some — often public and crowded — places, people also get flyers advertising shops or services under their windshields. Such experiences probably cause people to discard the letter.

Clearly, the odds for a letter to be posted might depend on the number of people passing by. We controlled for population density to account for that number, but population density influences the posting negatively. We also estimated models controlling for facilities in the neighborhood to assess the effects of the number of people who passed by to determine whether areas with many facilities differ in this regard, but they did not. Such a difference would indicate a special role of cities (cf. [Oliver 2000](#)).

An additional important finding is that shared control expectations do not mediate the influence of structural neighborhood conditions. These conditions seem to operate independently of each other in the Netherlands, but not in the United States ([Sampson 2012](#)). Our results indicate that mediation of structural conditions is context dependent.

### **Limitations**

Our use of the Lost Letter Technique to inquire about other-regarding behavior in neighborhoods has limitations. The relationship between neighborhood characteristics and posted letters might be moderated by the characteristics of the finder, which we were not able to control for. However, one also can argue that as long as the letters are posted, the identity of the mailer is not important. In other words, to the extent that the job is done, it is not important whether, for example, in high shared control expectation neighborhoods, people who do not live in the neighborhood mostly do the job. Shared expectations on social control of the neighborhood’s residents are related to the prosocial actions of the neighborhood *users*. It should be noted that in studies on crime or deviance, the characteristics of the offender are also mostly unknown. Understanding which actor characteristics — together with neighborhood characteristics — stimulate socially desirable behavior would help solve the general problem of how macro conditions affect micro behavior. Why do potential offenders refrain from offending in high collective efficacy neighborhoods? How do they realize that control might be higher than in other neighborhoods? It is likely that research in the lab can shed light on these questions.

### **Future Directions**

Our findings open up new possibilities for understanding behavior in public areas and reacting accordingly. For example, if policymakers know about the lack of

willingness to intervene in certain neighborhoods, they also know which neighborhoods require direct governmental action in the case of problems.

Another direction for future research is an inquiry into social cleavages and their consequences on the rate of letters posted. Milgram (1977) considered the Lost Letter Technique to be an appropriate tool to make social cleavages visible. Cleavages typically occur if different social categories systematically coincide, such as race and education or age and income. To inquire into these social cleavages, one should control for these types of combined conditions at the macro level.

To conclude, shared expectations of social control in Dutch neighborhoods are an important predictor for other-regarding behavior. The Lost Letter Technique, asking for small acts of kindness, seems appropriate for discovering neighborhood differences in this regard.

## Notes

1. The term “other-regarding behavior” is coined to explain observed deviations from game-theoretic predictions of dictator games (see Hoffman et al. 1996). It describes behavior without direct payoffs.
2. It can also be argued that if people expect that others will intervene, the likelihood of action may decrease because of free-riding. This attitude, however, cannot solve the volunteer’s dilemma.
3. We investigated whether letters from neighborhoods closer to this address had a higher chance of being posted, but this was not the case.
4. For the field experiment, 141 of 161 neighborhoods were randomly selected. In the analyses, these were aggregated to 110 neighborhoods.
5. According to the definition of Statistics Netherlands, people who live in the Netherlands and are born in a non-Western country or who have one parent who is born in such a country are considered non-Western residents. The four largest non-Western immigrant groups in the Netherlands are people from Morocco, Turkey, Suriname, and the Antilles.
6. Persons in the first and second income quintiles are not necessarily poor, but they belong to the lower end of the income scale. In the Netherlands, a single person with a net income equal or lower than 990 euros per month is officially considered poor (Statistics Netherlands and Social Science Research Bureau Report on Poverty 2013, 18 [“Armoedesignalement”]).
7. In a previous analysis, we also included the average price of the houses as a proxy for neighborhood stability. More expensive houses are typically owned property rather than rented.
8. Reliability of the econometric scales depends on the number of respondents in a neighborhood. It varies between 0.41 – 3 respondents – and 0.81 – 18 respondents. We also estimated models with only the neighborhoods with more respondents and came to the same conclusions. For the cohesion scale, reliability likewise varies between 0.43 and 0.84.
9. An anonymous reviewer noted that there may not be sufficient statistical power to detect a significant interaction effect between non-Western residents and the Turkish addressee name. This could lead to a type-2 error, or a “false negative” conclusion. This may indeed be the case, as the percentage of non-Western residents in each neighborhood fluctuates between 0 and 54 percent, with an average of 4.5 percent. There were no Turkish or Moroccan residents in approximately one-third of the neighborhoods in our sample, and for half of the neighborhoods, there were fewer than 10

percent. The effect size of the interaction is substantial, indicating that the relationship between letter addressee and posting a letter may be moderated by the percentage of non-Western residents in the neighborhoods. Additional research on neighborhoods with higher proportions of non-Western residents is recommended to shed light on this interaction.

10. The intraclass correlation (*ICC*) was calculated by the following formula for a multilevel logistic model (see Snijders and Bosker 1999, 224):  $ICC = \sigma^2 / (\sigma^2 + 3.29)$ , where  $\sigma^2$  is the variance at the neighborhood level and 3.29 refers to the fixed level-1 variance in a multilevel logistic model.

## Supplementary Material

Supplementary material is available at *Social Forces* online, <http://sf.oxfordjournals.org/>.

## About the Authors

**Beate Volker** is Professor of Sociology at the University of Amsterdam and chair of the programme group Institutions, Inequality, and Life Course. Her research is directed to the influence of contextual conditions on social networks and individual behavior. She has published a.o. in *Social Networks*, *Social Forces*, *Urban Affairs Review*, and *Social Science and Medicine*.

**Gerald Mollenhorst** is Assistant Professor in the Department of Human Geography and Spatial Planning at Utrecht University and a researcher in the Department of Sociology at Stockholm University. His research—predominantly on personal networks in different social contexts and their consequences for life chances of individuals and local businesses—has been published in edited volumes and international journals in sociology, such as *Social Networks*, *Social Forces*, and *Journal of Economic and Social Geography*.

**Wouter Steenbeek** is a researcher at the Netherlands Institute for the Study of Crime and Law Enforcement (NSCR) in Amsterdam. He uses quantitative methods to study spatial criminology, particularly the reciprocity between business presence and neighborhood crime, as well as guardianship behavior by neighborhood residents. He has published in journals such as *Criminology*, *Journal of Research in Crime and Delinquency*, and *International Journal of Behavioral Medicine*.

**Veronique Schutjens** is Associate Professor in the Department of Human Geography and Spatial Planning at Utrecht University and holds the Special Chair of Ethnic Entrepreneurship at the University of Amsterdam. Her research focuses on the neighborhood economy; entrepreneurial activities; growth, survival, and performance of firms; and entrepreneurial, migrant, and firm networks. She has published in edited volumes and international journals such as *Small Business Economics*, *European Planning Studies*, and *Urban Studies*.

**Henk Flap** is Emeritus Professor of Sociology at Utrecht University. He is interested in developing and testing a theory of social capital. He also works on the question of why many Jews living in Holland were killed during World War II. He has published inter alia in *Social Networks*, *European Sociological Review*, *Social Science Research*, *Social Forces*, and *American Sociological Research*.

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