

Neighborhood stereotypes and interpersonal trust: An experimental study

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### **Abstract**

Residential segregation is characteristic of most modern cities. Recent research indicates that segregation is, in addition to many other undesirable consequences, negatively associated with social capital, in particular generalized trust within a community. This study investigates whether an individual's residential neighborhood and the stereotypes associated with this neighborhood affect others' trusting behavior as a specific form of social exchange. Using an anonymous trust game experiment and five districts of the German capital, Berlin, as contextual variables, we show that trusting is contingent on others' residential neighborhood rather than on deliberate assessments of trustworthiness. Participants show significantly greater trust towards individuals from positively stereotyped neighborhoods with favorable socio-demographics than to persons from negatively stereotyped neighborhoods with unfavorable socio-demographics. Importantly, when stereotypes and socio-demographics point in opposite directions, participants' trust decisions reflect stereotype content instead of socio-demographics.

### **Keywords**

Residential segregation, diversity, trust, stereotypes

### **Neighborhood stereotypes and interpersonal trust: An experimental study**

Modern cities are typically characterized by residential segregation. Research on segregation today is one of the most active areas of inquiry in the social sciences, in particular in North American sociology. The reasons for this prominence are manifold, but the growing understanding of space and location as analytical categories in sociology and social theory and the increasing size and complexity of cities in contemporary societies are amongst the most evident (e.g., Logan, 2012). Moreover, despite a number of legislative and cultural initiatives aimed at desegregation (Smets & Salman, 2008), it tends to persist in most urban areas, racial and income segregation being the most obvious forms (Massey & Denton, 1993; Ellen, 2000).

Past research has documented the various individual, social, and economic consequences of segregation, in particular in terms of poverty, violence, health outcomes, educational attainment, or the stability of social networks in segregated areas (e.g., Quillian, 2012; Galster, 1988; Charles, 2003; Acevedo-Garcia, Lochner, Osypuk, & Subramanian, 2003). At the same time, research has also pinpointed some socially and economically desirable effects of segregation, such as urban structuring and suburbanization (see Cutler & Glaeser, 1997; Alba, Logan, Stults, Marzan, & Zhang, 1999). For example, new immigrants often start building social networks through contacts with peers from similar ethnic, religious, or language groups who are more likely to provide valuable resources than others (see, e.g., Edin, Fredriksson, & Aslund, 2003; Glitz, 2012; Damm, 2009).

Although a majority of segregation research today relies on larger scale survey and panel data, one of the pioneering studies of the field focused on the “micromotives” related to segregation, modeling individual preferences in neighborhood choice based on the racial composition of a neighborhood (Schelling, 1971). On this micro-level of segregation, race, ethnicity, and other factors of neighborhood composition have been shown to become associated with *neighborhood stereotypes* that influence housing and various economic and social

decisions, for example trusting behavior (Uslaner, 2010). In particular, generalized trust has been identified in surveys as being negatively affected by segregation (Uslaner, 2011). Neighborhood stereotypes and prejudices, which are rooted in deeply held stereotypes about racial and ethnic groups and are transferred to entire neighborhoods, have been shown to be a driving force in the persistence of segregation (Squires, Friedman, & Saidat, 2002).

Although much has been written about the mechanisms of racial neighborhood stereotypes involved in segregation processes, in particular concerning stereotypes related to Blacks and Whites in the U.S. (Ellen, 2000; Massey & Denton, 1993; Quillian & Pager, 2001), comparably little is known about the effects of stereotypes that are based on factors other than a neighborhood's racial and ethnic composition, for example its historical development, economic prosperity, or prevalence of specific social milieus and lifestyles. This is all the more surprising since neighborhood stereotypes are frequently used to describe neighborhoods in everyday culture, for example in literature, media, and travel guides.

Referring to Bruch's and Mare's (2009, p. 272) claim that "segregation processes result from interdependence between the actions of individuals and the characteristics of groups", we were interested in the general question of how neighborhood stereotypes influence social interactions, in particular exchange relations, between individuals from different neighborhoods. More specifically, we were interested in the question whether an individual's residential neighborhood is associated with his or her trustworthiness in an otherwise anonymous social exchange situation. In other words, we looked at the potential of activated neighborhood stereotypes to serve as a signal in decisions to trust or distrust. To this end, we devised an anonymous bargaining game experiment with a neighborhood stereotype manipulation to investigate how stereotypes affect trusting behavior and decision-making in social exchange.

The article is structured as follows. We will first briefly review studies on the causes and consequences of residential segregation and then discuss research that has investigated the

influence of segregation on social interactions and exchange relations. Here, we are particularly interested the consequences of segregation on interpersonal trust. We then describe the rationale of our study, its design and the methods we used. Subsequently, we present the results and discuss our findings.

### **Residential segregation: causes and consequences**

Residential segregation is widely perceived to be detrimental in terms of individual and social outcomes. On the structural level, segregation is associated with the unequal provision of public goods, for example schooling institutions and health care (Fernandez & Levy, 2008; Alesina, Baqir, & Easterly, 1999), pronounced disparities in housing prices (Cutler, Glaeser, & Vigdor, 1999), differences in crime and violence rates (Akins, 2007), educational attainment (Frankenberg, 2009), and school drop-out rates (Orfield & Lee, 2005). Segregation has also been shown to be linked to an increased isolation of individuals and groups, reduced interactions between groups, lower levels of inclusion into social clubs and associations and civic engagement, and an overall reduction of communal values and a threatening of social cohesion (Cutler & Glaeser, 1997). Also, access to social networks and occupational opportunities is limited in many segregated neighborhoods and ethnic enclaves (Cutler & Glaeser, 1997).

Although residential segregation is spurred by a multitude of (often recursively) interacting factors, a number of mechanisms have been repeatedly studied and are now well-established in the literature. A key factor contributing to residential segregation are individuals' preferences for other groups and individuals (Schelling, 1969; Clark, 1986, 1988). This is best seen by looking at racial and ethnic segregation. For example, Blacks in the U.S. for decades tended to prefer living in black or mixed neighborhoods, despite changes in racial attitudes and various legislative initiatives (Thernstrom & Thernstrom, 1997). Racial or ethnic self-selection, which may be linked to the provision of "local private goods" (Waldfogel, 2008), therefore significantly contributes to the emergence of specific urban enclaves. Likewise, Boustan (2012)

argues that either collective or individual actions of White homeowners contribute to racial segregation. These encompass organized strategies to exclude non-Whites from certain residential areas as well as the preferences of Whites to leave neighborhoods that are increasingly populated by Blacks (Farley et al., 1994; Card, Mas, & Rothstein, 2008; see also Boustan, 2012). Farley and colleagues (1994) have argued that these preferences to a great extent arise from stereotypes towards other groups, for example in terms of taking care of one's home or proneness to criminal activities. Even though many homeowners may not endorse these stereotypes, they still might be motivated to relocate out of a neighborhood because they assume that others hold these stereotypes and that the value of their homes will successively decrease.

Closely tied to individual preferences on the institutional or organizational level are discriminating practices in the housing market (Galster & Kenny, 1988). Many studies have shown that discriminating behavior of real estate brokers and lenders is one of the main reasons for segregation (e.g., Munnell, Tootell, Browne, & McEneaney, 1996; Farley et al., 1994). Although major legal changes since the 1960s have put an end to legitimized discrimination in the housing market in U.S. American cities, discrimination practices towards ethnic minorities continue to be an issue and still contribute to segregation (Boustan, 2012). Research indicates that minority groups receive less information on housing, a lower quality of service from real estate brokers, pay higher fees, and mortgage applications are more complicated and yield higher chances of denial than for Whites (Yinger, 1998, as cited in Charles, 2003). In addition, geographical steering is usually involved in marketing of real estate agencies, whereby Whites are provided with more negative information on mixed neighborhoods and ethnic minorities are presented with rather positive features (Yinger, 1998).

### **Segregation in European cities**

Another major factor contributing to residential segregation are socio-economic and demographic differences amongst households and individuals (Darroch & Marston, 1971;

Massey, 1979). Although these differences are highly correlated to racial and ethnic factors, income and educational attainment have more recently been shown to make an independent contribution to explaining segregation, in particular in European cities (Semyonov, Raijman, & Gorodzeisky, 2008). For example, Harsman and Quigley (1995) have shown that spatial segregation by race or ethnicity is mostly unrelated to economic factors underlying segregation, such as income class or demographic grouping. Using innovative survey data at the micro-neighborhood level for Germany, Sager (2012) shows that that income, education, language proficiency and city size account for a substantial amount of residential isolation among four immigrant groups.

Compared to the North American tradition, research on residential segregation in Europe has only emerged relatively recently (Musterd, 2005; Musterd & van Kempen, 2009; Glikman & Semyonov, 2012; Iceland, 2014). Generally, segregation in European cities is supposed to be less pronounced than in North America (e.g., Musterd, 2005). However, it has reached substantial levels, in particular in large multi-cultural conglomerations (Glikman & Semyonov, 2012). Segregation in Europe is mainly driven by immigration-related processes and is focused more on ethnic rather than racial segregation. Ethnicity, religion and language, often along with economic inequalities, seem to be the main determinants of segregation in Europe (Glikman & Semyonov, 2012). Compared to segregation processes in North America, self segregation into specific neighborhoods seems to be more pronounced in Europe and discrimination based on residential neighborhood is a common issue across European countries (ibid.). In summarizing previous studies, Glikman and Semyonov (2012, p. 199f) state that European cities differ substantially regarding the composition of ethnic minorities and the rates of segregation based on ethnicity. Moreover, patterns of segregation have changed over time, although segregation rates have generally remained stable. Rates vary between different ethnic groups as well as across countries and cities within one country for specific groups.

Regarding the consequences of segregation, European research is much less focused on violence, gang problems, and drug related crimes, as is the case in the US, but has primarily looked at social mobility, discrimination, and the integration of migrant populations (Musterd, 2005). At large, existing research suggests that the integration immigrants differs across countries and groups, although immigrants from other European countries are substantially less isolated than those from the Middle East, Asia, and Africa (Glikman & Semyonov, 2012). Using German panel data, for example, Dill and Jirjahn (2014) report that immigrants in segregated neighborhoods report ethnic discrimination more frequently.

### **Neighborhoods as symbolic boundaries**

Irrespective of European or North American contexts, a common mechanism underlying many of the established processes of segregation is that it promotes the creation of spatial and symbolic boundaries between neighborhoods and patterns of in-group and out-group behavior based on such boundaries. According to this view, first elaborated by Hunter (1974), residential segregation does not only constitute spatial zones and boundaries, but also leads to the emergence of “cognitive frameworks” (Hwang, 2007) guiding everyday behavior towards individuals in specific neighborhoods that is largely unrelated to immediate concerns of housing and residential location. Importantly, these cognitive frameworks need not be driven by discrimination based on racial or ethnic factors, but may encompass other characteristics that likewise contribute to the formation of stereotypes and prejudice, such as class, status, gender, sexual orientation, or lifestyle.

In a similar way, Semyonov and Glikman (2009, p. 695) argue that “individuals possess a ‘cognitive map’ of communities and neighborhoods” and organize “city-neighborhoods on hierarchical scale of desirability according to their social status and ethnic composition”. This implies that individuals usually attribute certain features to neighborhoods and urban areas that are related actual or assumed characteristics of their inhabitants. Hence, neighborhood



stereotypes become signals for others to behave in a certain way towards inhabitants of a neighborhood. These cognitive maps tend to categorize neighborhoods according to their stereotypical characteristics to be, for example, “dangerous” vs. “safe”, “black” vs. “white”, or “poor” vs. “rich”.

### **Trust, diversity and segregation**

On the micro level of social behavior and interaction, generalized trust as a specific form of social capital has been primarily investigated with respect to the ethnic composition of neighborhoods. Putnam’s (2007) well-known argument states that ethnic diversity in residential neighborhoods leads to a decline in trust and solidarity because people tend to become isolated from one another and to “hunker down”, i.e. “to pull in like a turtle” (Putnam, 2007, p. 149). Although a great number of studies has more or less confirmed Putnam’s conjectures (e.g., Gundelach & Traunmüller, 2013; Schaeffer, 2013; Koopmans & Veit, 2013), other studies have failed to support his hypotheses, primarily in settings outside the U.S. (e.g., Gijssberts, van der Meer, & Dagevos, 2011; Gundelach & Freitag, 2013; Sturgis, Brunton-Smith, Read, & Allum, 2011). Hence, the evidence on the effects of ethnic diversity on trust, solidarity, and other forms of social behavior is at best mixed (e.g., Hooghe, Reeskens, Stolle, & Trappers, 2009; Laurence, 2011; Stolle, Soroka, & Johnston, 2008). At the same time, ethnic diversity has been linked to a number of positive outcomes, for instance increased wages and higher prices for rental housing in diverse metropolitan areas (Ottaviano & Peri, 2005).

Aside from the mixed evidence, Putnam’s (2007) thesis has been challenged on conceptual grounds. Uslaner (2010) argues that it is not diversity per se that is responsible for declines in trust, cohesion, and solidarity, but rather residential segregation. He holds that, firstly, “diversity is largely a proxy for large non-white populations rather than an ‘intermingling’ of different ethnic and racial groups” (Uslaner, 2011, p. 223) and, secondly, that “when people of different backgrounds live apart from each other, they will not develop the sorts of ties or

attitudes that lead to trust” (Uslaner, 2011, p. 223). According to this view, segregation shapes the overall trusting propensity of individuals, promoting particularized trust at the expense of generalized trust. Generalized trust refers to the propensity to trust in previously unknown people whereas particularized trust only involves trust in members of one’s own group.

In sum, research on the links between urban organization and trust has focused on the effects of the ethnic composition of a neighborhood and the degree of ethnic or racial segregation on residents’ propensity for generalized trust. While extant research has clearly identified robust links between urban organization and trust, the underlying mechanisms of this linkage are much less clear. Studies using diversity measures as the main independent variable focus on trust *within* a neighborhood or some other spatially defined area and tend to neglect the potential effects of various group-related processes underlying trust or mistrust. In contrast, research using segregation indicators captures the effects of segregated groups on trust. However, these group-related processes usually remain implicit in the pertinent studies since surveys seldom provide dedicated data on intergroup relations. Hence, although the effect of segregation on trust is mainly investigated on aggregate and community levels, this research suggests that low levels of trust are – also – brought about by a lack of trust *between* segregated groups.

To our knowledge, only one study has so far specifically addressed trusting behavior between individuals from more or less segregated groups, i.e., neighborhoods. Falk and Zehnder (2013) conducted a trust experiment in the city of Zurich, Switzerland, in which participants could condition their investments in a bargaining game on the residential neighborhood of their co-players. The study shows that participants differentiate investments according to the Zurich neighborhood in which the co-player lives. The main determining factor of a district’s trust reputation is its economic status as measured by the median per capita income. Other variables, such as the fraction of foreigners living in a neighborhood or religious fragmentation of districts, are correlated with a district’s trust reputation, but are not robust when controlling for income.

The study shows that residents hold particular beliefs about the trustworthiness of specific neighborhoods and that these beliefs are accurately mirrored by their actual trusting behavior. The study likewise suggests that in social exchange relations characterized by limited information on interaction partners, individuals resort to stereotypical knowledge about statistically identifiable groups. These stereotypes involve, for instance, beliefs about crime tendencies and income inequalities (Farley et al., 1994). This view tallies with Semyonov's and Glikman's (2009) view that citizens represent communities and neighborhoods in hierarchically structured cognitive maps based on, for example, social status and ethnic composition.

### **Neighborhood stereotypes and generalized trust in the German capital**

The research summarized above suggests, first, that neighborhood stereotypes and corresponding cognitive frameworks influence individual preferences and social interactions and exchange with individuals living in specific neighborhoods. Second, this research suggests that ethnic diversity and segregation most likely affect interpersonal trust and other forms of prosocial behavior within specific neighborhoods. In this study, we sought to combine these insights and investigated the question whether neighborhood stereotypes affect interpersonal trust between individuals from different neighborhoods. More specifically, we analyzed whether one's neighborhood acts as a signal affecting social interactions amongst otherwise unknown individuals (strangers). We hypothesized that (H1) neighborhood stereotypes are confirmed in trusting behavior towards strangers, i.e. that individuals show less trust towards individuals from negatively stereotyped neighborhoods than towards those from neutral or positively stereotyped districts. Moreover, and in line with previous research on trust in social exchange, we hypothesized (H2) that trusting behavior should very generally concur with individuals' expectations of others' trustworthiness. However, and more specifically, we also hypothesized (H3) that (rational) expectations of others' trustworthiness are not crucial for trusting behavior in the urban context and that, rather, neighborhood stereotypes motivate trust decisions. This

hypothesis is motivated by two conjectures. First, trust in many cases cannot (entirely) be explained by rational considerations regarding others' trustworthiness but needs to rely on alternative, often emotional or affective, cues (Lahno, 2001). Hence, in many situations, actors resort to stereotypical images and their emotional associations when making decisions to trust, as shown in research on intergroup relations (e.g., Cuddy et al., 2009). Second, declarative knowledge of neighborhoods that may inform rational assessments of trustworthiness, for instance on a neighborhood's socio-demographics or crime rates, is often insufficient to solve decision problems in social exchange because this information can be inconsistent, even pointing in opposite directions, or be entirely unavailable. Although stereotypes to some extent certainly do reflect neighborhoods' objective living conditions, they also include social and cultural prejudice and bias and need not coincide with the "objective" characteristics.

To test these assumptions, we conducted a laboratory experiment in which participants from the city of Berlin, Germany, played a trust game, i.e. a bargaining game in which two anonymous players can maximize their payoffs when trusting one another (see Berg, Dickhaut, & McCabe, 1995, for a detailed description). We modified the original game by adding context to the decision situation, i.e. by including a neighborhood manipulation. Specifically, we presented participants with information on the neighborhood in which the other players live.

Berlin is an ideal case for various reasons. Berlin is the capital of the Federal Republic of Germany with approximately 3.4 million inhabitants in 2013. It was a state-divided city between 1948 and 1990, being physically divided through the Berlin Wall from 1961 to 1989. Until 2001, Berlin was organized into 23 neighborhoods (*Ortsteile*) that have been merged into the current twelve administrative districts (*Bezirke*). Aside from scholarship looking at the general transformation of the city after German reunification in 1990 (e.g., Cochrane & Jonas, 1999), segregation is mostly discussed with regard to ethnicity and immigration (Kemper, 1998). Currently, 23 percent of the Berlin population has an immigration background and the largest

immigrant group is of Turkish origin. Other notable minorities include immigrants from Russia, Poland, former Yugoslavia and various Arab and European countries (see Koopmans & Veit, 2014, p. 385f, for a detailed exposition).

Important for our study, many of Berlin's neighborhoods have – often for decades – been imbued with pronounced and well-known stereotypical attributes that are frequently reproduced and reinforced in everyday culture, for example in Berlin's city guides and magazines, daily newspapers, theater plays, cabarets, social and broadcast media. Moreover, since Berlin is the German capital and one of Europe's historically most noticeable cities, these stereotypes as well as factual information on many of the city's neighborhoods are perpetuated not only in local, but also in national and international media.

## Methods

### Participants

Sixty-eight individuals (37 females;  $M_{age} = 40.5$ ;  $SD_{age} = 12.4$ ) living in 19 different neighborhoods of Berlin took part in the study. Participants were almost evenly distributed across these 19 neighborhoods (see Table 1 for details) so that their own residential area is unlikely to confound our results (see below). Participants were recruited using e-mail lists, announcements in internet forums, and word-of-mouth advertising.

< insert Table 1 about here >

### Measures

We measured trusting behavior using a well-established bargaining game, the trust game (Berg et al., 1995). In this game, two randomly matched players (A and B) gamble sequentially. Both players are informed of the rules and know the payoffs. Player A (the *sender*) decides how much of a given endowment (nothing to all) she wants to transfer to player B (the *receiver*). This amount is tripled “on the way” to player B. Subsequently, B has to decide how much of the tripled amount she wants to keep and how much she wants to send back to player A. B's payoff

consists of the amount not sent back to A, while the payoff for player A is the sum of the formerly kept amount plus the amount sent back by player B. Since B is also free to keep all the money and does not need to send anything back, the decision of A to send a positive amount is considered trusting behavior. Thus, the tripling is an incentive for a risky decision and functions as a reward for trusting.

We implemented a computerized version of this game using the *z-Tree* software (Fehr & Gächter, 2000), where participants only had to play the role of A. The game was modified so that participants were led to believe that they interact anonymously with other receiving players whose decisions to all possible monetary transfers were previously recorded. In fact, however, all receivers were simulated by the z-tree software using the following decision parameters (zero transaction yields zero returns; a non-zero transaction of  $T$  yields a rounded down to integers expression of  $(T*2)*R+I$ , where  $R$  is a random number from a  $[0;1]$  interval). Each participant played five successive rounds of the trust game with 5 different receivers (from 5 different neighborhoods) and was endowed with 5 Euros for each round. Participants were then provided with information on the neighborhood in which the receiver currently lives (see *Materials* for details) and asked how much of the 5 Euros (0, 1, 2, 3, 4, 5) to transfer to the receiver. Specifically, players saw the on-screen question: “Your partner lives in  $\langle neighborhood \rangle$ . How much do you want to transfer?” Participants were asked to enter the amount on the keyboard. At the beginning of the procedure, participants were instructed that once the five rounds are completed, they can select one of these rounds as their reimbursement payoff. After this decision was made, participants were presented on-screen with the amounts returned by the receivers in each round. In addition to behavioral trust, we also assessed the returns participants expected to get from the receivers. Immediately after the transfer decision was made, we asked “How much do you expect to get back from your partner?” The expected amount was entered on the keyboard. We take this post-hoc estimation of trustworthiness as a deliberate assessment of the

receivers' willingness to reciprocate and act pro-socially, possibly based on participants' available knowledge of the respective neighborhoods.

### **Materials**

We aimed at activating neighborhood stereotypes as our main predictor variable by presenting the name of the neighborhood in which the receivers (allegedly) lived as the only available information about the receivers. We selected five Berlin neighborhoods based on three criteria. First, we acquired stereotypical depictions of neighborhoods as they are frequently constructed and reproduced in everyday culture, e.g., in theater (“Gutes Wedding, Schlechtes Wedding”), music, literature, weekly magazines, travel literature, or documentaries (e.g., “Kreuzberg 36” by Angeliki Aristomenopoulou, “Berlin Prenzlauer Berg 1990” by Petra Tschoertner). These cultural representations include, for example, depictions of lifestyles, typical occupations and family structures, age, ethnic composition, nightlife and entertainment, socio-economic status, and crime rates. Second, we looked at objective segregation data such as age structure, ethnic composition, income, and unemployment rates available from official statistics that to some extent may represent individuals' declarative knowledge about a neighborhood. Third, because the divide of Berlin between the former German Democratic Republic (East Germany) and the Federal Republic (West Germany) still yields marked cultural differences, we selected neighborhoods that belong to both countries during that time.

<insert Table 2 about here>

Based on these characteristics, we selected two unambiguously favorable neighborhoods in terms of stereotypes and socio-demographic structure, one unambiguously unfavorable neighborhood, and two ambiguous cases, one with positive stereotypes but unfavorable socio-demographics and one with negative stereotypes but rather favorable socio-demographics. Two neighborhoods that are associated with predominantly positive stereotypes (e.g., in terms of cultural and leisure activities) and have a favorable socio-demographic structure (e.g., in terms of

income and education) are *Charlottenburg* (West) and *Prenzlauer Berg* (East). Charlottenburg is usually portrayed as prosperous, safe, and settled. It is one of the wealthiest neighborhoods not only in Berlin but across Germany (Brandt, 2011) and known for luxury shopping, museums, and architecture (Dörre, 2011; Pearson, 2013b, Frommer's, 2013). As shown in Table 2, socio-demographics largely mirrors these stereotypical attributions. Charlottenburg scores high (0,26) on the Social Index, a composite measure provided by the official statistics of the city of Berlin covering 25 variables related to stratification and inequality, for example unemployment, social welfare, life expectancy, educational attainment, and income (range: -3 to 3). It also has the highest monthly net income of the selected neighborhoods and a low unemployment rate.

Likewise, Prenzlauer Berg is mostly portrayed as expensive, bourgeois, and “hip” in everyday culture. Residents are described as wealthy, international, “yuppie bohemians” (Pearson, 2013b). Many British and American immigrants live here and travel guides describe the neighborhood as relaxed, streets being full of organic food cafes and shops, restaurants, yoga clubs, and trendy clothing boutiques (Frommer's, 2013). Looking at the socio-demographic data in Table 2, it is evident that the proportion of children and adolescents is comparably high, the neighborhood has a relatively high income and a low unemployment rate (8,5%) and is ethnically not particularly diverse (based on the fraction of inhabitants with a migration background). However, it bears a comparably low Social Index (-0,60). Taken together, both neighborhoods can be characterized by high levels of cultural and economic capital, i.e. they are positively stereotyped and comparably well-off.

We selected *Wedding* (West) as a neighborhood that is often associated with negative stereotypes and has a relatively unfavorable socio-demographic structure. Wedding is typically described as “Berlin at its most multicultural; it's edgy and arty” (Pearson, 2013a), although, historically, the “arty” component is a very recent result of gentrification. Wedding is often portrayed as a traditional working class borough with a diverse multiethnic population (many



from Turkey and Arab countries). It is still one of the poorest neighborhoods of Berlin and widely considered crime-ridden. This is largely mirrored in Wedding's socio-demographics, Table 2 showing a high unemployment rate (15,9%), a high proportion of migrants (53,1%) and a low Social Index (-2,10).

*Marzahn* (East), on the other hand, is negatively stereotyped but bears acceptable socio-demographics. It is often described as an “archetypical tower-block monstrosity” (see, e.g., *Wanted in Europe*, 2013), its inhabitants portrayed as almost “White trash” lower educated and living on little income with a high proportion of primarily Russian and Eastern European immigrants. As the German newspaper *taz* writes, “Marzahn is synonymous for ghetto and social decline to many Berliners”.<sup>1</sup> This stereotypical image is caricatured by comedian “Cindy aus Marzahn”, who has gained nation-wide TV prominence. Marzahn's socio-demographics, however, point a notably different picture. Only a comparably small fraction of inhabitants has a migration background (14,1%), Marzahn has an acceptable Social Index (0,02) and a relatively acceptable unemployment rate (11,3%).

We included *Kreuzberg* (West) as the reverse example of an ambiguous neighborhood. On the one hand it is praised for its cultural diversity, leisure time activities, liveliness, and cosmopolitan urban character. Residents are described as bourgeois, gritty, anarchic, international, and “anti-establishment” and its atmosphere is said to be arty, eco, low-key, alternative, and family-friendly (Pearson, 2013b). Kreuzberg is one of the most attractive nightlife areas and a popular tourist location. However, socio-demographics, as shown in Table 2, reveal a notably different picture. Kreuzberg has a high level of ethnic diversity (49,6 % of residents have a migration background) and the lowest Social Index (-2,31) of the neighborhoods we selected. However, it has an unemployment rate similar to that of Marzahn (11,8%).

## Results

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<sup>1</sup> <http://www.taz.de/!98193/> ; own translation

Our analyses focused on two questions. First, we sought to establish whether trusting behavior, i.e. participants' decisions on which proportion of their initial endowment to transfer to the receivers, are linked to the residential neighborhood of the receiver. To do so, we compared whether average transfers vary depending on residential neighborhood of the receiver. Second, we investigated whether and how expectations of trustworthiness and stereotypes predict trusting behavior. To this end, we analyzed associations between expected return transfers (as indicators of assessments of trustworthiness) and neighborhoods with participants' trusting behavior. Although this may already provide insights into the relevance of neighborhood stereotypes as compared to assessments of trustworthiness, the effect of stereotypes can be further identified by specifically looking at trust towards neighborhoods that are ambiguous in terms of stereotypes and socio-demographics.

### **Descriptive analyses**

The mean transfer across all participants and neighborhoods was 3.61 Euros, which corresponds to 72% of participants' initial endowment. Compared to other studies using anonymous trust games, this is a relatively high proportion. One reason might be that most of the participants and all of the receivers (allegedly) lived in Berlin and that information on the greater residential area is sufficient to induce above average levels of trust.

<insert Figure 1 about here >

In a second step, we analyzed whether average transfers varied by neighborhood. Figure 1 shows mean transfers separately for each of the five neighborhoods. We find that receivers said to live in Charlottenburg ( $M= 3.78, SD=1.33$ ), Kreuzberg ( $M= 3.82, SD=1.22$ ), and Prenzlauer Berg ( $M= 3.72, SD=1.14$ ) received mean transfers above 3.7 Euros, whereas receivers from Wedding ( $M= 3.37, SD=1.33$ ) and Marzahn ( $M= 3.38, SD=1.43$ ) received transfers not exceeding 3.4 Euros on average. Using two-tailed t-tests and pairwise comparisons, we find that comparing Wedding and Marzahn to Charlottenburg and Kreuzberg yields significant

differences ( $p = .01$ ) as does comparison with Prenzlauer Berg ( $p = .05$ ). In sum, descriptive analyses lend support to our hypothesis H1 that participants show significantly lower trusting behavior towards the negatively stereotyped neighborhoods.

In addressing the second question, we first analyzed whether participants' evaluations of expected returns differ by other players' residential neighborhood. Since expected returns are highly correlated with participants' transfers ( $r = 0.65$ ), we examined expected return ratios, i.e. the expected return on investment,

$$ERR = ER / I,$$

where  $ERR$  is the expected return ratio,  $ER$  is the expected return (in Euros) and  $I$  is the investment, i.e. the amount transferred to the receiver (in Euros).

<insert Figure 2 about here >

Figure 2 shows the average expected return ratios separately for each of the five neighborhoods. Interestingly, all return ratios are greater than 1, which implies that no neighborhood is assumed to back-transfer less money than the amount received. Moreover, and less surprisingly, the differences in return ratios roughly mirror the differences in transfers. Highest returns depending on the amount transferred are expected from players living in Kreuzberg ( $ERR = 1.25$ ). This means that participants expect to receive returns from players living in Kreuzberg to be 25% above the amount transferred to these players. Returns from Charlottenburg ( $ERR = 1.18$ ) are expected to be 18% higher, from Prenzlauer Berg ( $ERR = 1.17$ ) 17% higher, from Wedding ( $ERR = 1.13$ ) 13%, and Marzahn ( $ERR = 1.11$ ) 11% higher than the transfers. However, pairwise comparisons using two-tailed t-tests show that only the difference between Kreuzberg and Wedding ( $p = 0.009$ ) is significant. In sum, these results lend some support to our hypothesis H2 since investments and expected returns point in the same direction, even if only one difference proves to be significant. We will test the robustness of this finding using multivariate analyses in the following section.

### **Multivariate analyses**

Although the results of our descriptive analyses are suggestive in terms of our hypotheses, they are insufficient to actually explain whether and how the expected returns are decisive for the investment decision. To this end, we specified fixed-effects regression models. We opted for fixed-effects models because they allow to account for the repeated-measures design and to control for unobserved and time-invariant interindividual heterogeneity (Wooldridge, 2010). We used the amount transferred to the receivers as our dependent variable and expected returns and neighborhoods as our main predictor variables. We did not include subject-specific control variables such as age, gender, or dispositional trust since unobserved interindividual heterogeneity is accounted for by the fixed-effects model in that this model relies solely on mean-centered person-specific variance across all games played by a participant.

<insert Table 3 about here >

Model one in Table 3 shows that expected return ratios are not associated with participants' transfer decisions, i.e. trusting behavior. Instead, model two indicates that receivers' neighborhood is a significant predictor of transfer decisions. Using Kreuzberg as the reference category, the fixed-effects regressions show that participants transfer significantly lower amounts to players from Wedding and Marzahn. However, and in line with our hypotheses, participants do not discriminate between the three neighborhoods of Charlottenburg, Kreuzberg, and Prenzlauer Berg. Moreover, as shown in model three, neighborhood effects are stable when controlled for expected returns. Taken together, this supports our hypothesis H1, i.e., that individuals show less trust towards individuals from negatively stereotyped neighborhoods than towards those from neutral or positively stereotyped neighborhoods. Also, the analyses support H3 that trusting behavior in otherwise anonymous exchange relations is not driven by deliberate expectations of trustworthiness. Although we cannot directly measure neighborhood stereotypes, the behavior we observe for those districts for which objective living conditions and stereotypes

point in opposite directions (Marzahn, Kreuzberg) suggests that stereotypes motivate trusting behavior.

### **Discussion**

This study investigated how cultural neighborhood stereotypes influence social interaction, in particular social exchange, between residents of different neighborhoods in the city of Berlin, Germany. Previous works have shown that generalized trust as an important behavioral propensity is significantly affected by segregation. Existing studies, however, mainly investigated the effects of ethnic segregation and have seldom explicitly focused on actual trust decisions involving individuals from different neighborhoods. Hence, our study looked at the role of neighborhood stereotypes in decisions to trust individuals from different neighborhoods. Our study is based on the assumption that trusting decisions can be informed through two pathways. First, through stereotypical images and “cognitive maps” (Semyonov & Glikman, 2009) of neighborhoods, and, second, through deliberate (or possibly “rational”) expectations of others’ trustworthiness based on descriptive knowledge of the “objective” living conditions in a neighborhood. Although evidently both processes go hand in hand, we assumed that whereas stereotypes are usually clear-cut images of a neighborhood, knowledge of living conditions, such as socio-demographics, can point in different directions or might be unavailable for a decision-making problem at hand. Hence, we assumed that expectations of trustworthiness cannot fully explain neighborhood trust and that neighborhood stereotypes instead play a decisive role.

Results of our study show that participants exhibit lower levels of trust towards predominantly negatively stereotyped neighborhoods (Wedding, Marzahn) than towards neighborhoods carrying mostly positive connotations (Prenzlauer Berg, Charlottenburg, Kreuzberg). A second key finding is that participants’ trust decisions are not based on their assessments of trustworthiness of different neighborhoods. Instead, the neighborhood to which transfers are made is the sole significant predictor of trusting decisions. This supports the view

that neighborhoods have a specific “trust reputation” signature (Falk & Zehnder, 2013) and that stereotypical attitudes associated with neighborhoods are likely to play a decisive role in people’s decision to trust or mistrust. At the same time, our findings suggest that (knowledge of) certain socio-demographic characteristics of a neighborhood, which are likely to inform expectations of trustworthiness, seem to be less important for otherwise anonymous social exchange. Hence, trust discrimination between neighborhoods cannot be explained by instrumental rationality (as reflected by assessments of trustworthiness) but involves cultural and social psychological factors. This is underlined by opposite trust patterns towards individuals living in Marzahn (negatively stereotyped, acceptable socio-demographics) and Kreuzberg (positively stereotyped, unfavorable socio-demographics) as well as by non-discrimination between Prenzlauer Berg, Charlottenburg (both positively stereotyped with favorable socio-demographics), and Kreuzberg. These results, however, have to be interpreted with care given the limitations of our study. Firstly, our findings are based on a comparably small sample size, secondly, we did not directly measure neighborhood stereotypes.

Nevertheless, our study contributes to current segregation theory and research in different respects. First, extending studies on the consequences of segregation for social mobility and integration, in particular regarding immigrant populations in European societies (e.g., Dill & Jirjahn, 2014), our findings show that behavioral discrimination also exists in dyadic social exchange relations between individuals from different neighborhoods. In addition to evidence regarding generalized trust (Uslaner, 2010, 2011), this finding is important because it refers to trust in specific social exchanges in which both players can be better off when they cooperate. Although our study cannot directly speak to the question of whether diversity or segregation is the most notable predictor of discrimination in a community, it generally supports the view that the fragmentation of urban areas into clearly discernible neighborhoods has consequences for (cross-neighborhood) social interactions and exchange. This is particularly important in social

encounters in which “the first impression counts” and actors initially have little personal knowledge of one another, such as in job interviews, initiating business contacts, or student-teacher relations.

Second, our study offers novel insights into the determinants of discrimination between segregated neighborhoods. Most existing studies have not yet precisely looked at the mechanisms underlying the links between segregation and mistrust. They frequently rely on correlational evidence using indicators on, for example, racial or ethnic fragmentation, income or educational attainment to predict generalized trust. Regarding the micro-level decision-making processes of individuals, we suggest that not only “objective” information on a specific neighborhood, but also their distinctive stereotypical images influence decisions to trust. This way, we pave the way to establish links between the social psychology of stereotypes, prejudice, and discrimination on the one hand and sociological segregation research on the other hand. Hence, the study suggests that the detrimental effects of residential segregation are not only rooted in objective life conditions and socio-demographics, but likewise in discourse and cultural practices and their ramifications for the “cognitive maps” people use to characterize neighborhoods and their residents. Importantly, stereotypes as outcomes of those practices might further reinforce existing detrimental consequences of residential segregation in everyday social interactions. It is not only the “objective” characteristics of neighborhoods, such as racial composition or income levels that affect whether people tend to trust individuals from these neighborhoods or not, but also a neighborhood’s place in culture. Neighborhood stereotypes and the ways in which they are created or perpetuated in popular culture, significantly affect social behavior regardless of whether one’s first-hand experience with individuals living in a specific neighborhood.

Finally, a more general implication for segregation research is that in order to assess the consequences of segregation, it is not sufficient to exclusively look at segregation data obtained

from surveys or official statistics, but to also look at how neighborhoods are represented in people's minds, for instance in stereotypes, and shape social interaction across neighborhoods. Hence, anti-segregation policies need to be accompanied by changes on the cultural level and a general awareness that the reproduction of negative stereotypes through popular culture and media maybe reinforce existing disadvantages. Therefore, future studies need to more precisely look at the characteristics of neighborhood stereotypes and investigate their emergence and dynamics of change.

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### Figures and Tables

*Table 1.* Distribution of participants' self-reported residential neighborhoods

Berlin neighborhood	Frequency	Percent
Friedrichshain	3	4.62
Hohenschönhausen	2	3.08
Köpenik	1	1.54
Lichtenberg	2	3.08
Mitte	3	4.62
Pankow	1	1.54
Prenzlauer Berg	6	9.23
Treptow	3	4.62
Charlottenburg	5	7.69
Kreuzberg	4	6.15
Neukölln	1	1.54
Schöneberg	8	12.31
Spandau	4	6.15
Steglitz	7	10.77
Tempelhof	2	3.08
Tiergarten	2	3.08
Wedding	1	1.54
Wilmersdorf	5	7.69
Zehlendorf	5	7.69
<i>Total</i>	<i>65</i>	<i>100</i>



Table 2. Socio-economic and demographic characteristics of the five Berlin neighborhoods

	Charlottenburg	Kreuzberg	Prenzlauer Berg	Wedding	Marzahn
Age in years <sup>1</sup>					
>= 65	20,5 %	9,2 %	11,0 %	13,4 %	17,9 %
<= 6	4,5 %	6,4 %	7,2 %	6,7 %	5,4 %
Social Index <sup>2</sup>	0,26	-2,31	-0,60	-2,10	0,02
Proportion of migrants <sup>3</sup>	36,5 %	49,6 %	17,3 %	53,1 %	14,1 %
Unemployment rate <sup>4</sup>	8,2 %	11,8 %	8,5 %	15,9 %	11,3 %
Crime index <sup>5</sup>	22113	18896	13557	20250	11641
Net income <sup>6</sup>	1675 €	1400 €	1675 €	1475 €	1625 €

<sup>1</sup>Data: Monitoring Soziale Stadtentwicklung 2011, own calculations;

<sup>2</sup>Data: Sozialstrukturatlas Berlin 2003; The *Social Index* is a composite index covering 25 variables related to stratification and inequality, for example unemployment, social welfare, life expectancy, premature death, educational attainment, and income (range: -3 to 3).

<sup>3</sup>Proportion of citizens with migration background; Data: Monitoring Soziale Stadtentwicklung 2011, own calculations

<sup>4</sup>Unemployment rate of citizens aged 15 to 65. Data: Monitoring Soziale Stadtentwicklung 2011, own calculations;

<sup>5</sup>Crime incidents per 100.000 inhabitants in 2011 (= (number of incidents\*100.000) / number of inhabitants) (Data: Kriminalitätsatlas Berlin 2011)

<sup>6</sup>Mean net monthly household income in Euros (StatistikBerlinBrandenburg, 2012)

Table 3. Fixed-effects regressions on transfer decisions

	Model 1	Model 2	Model 3
Expected return ratio	0.09 (0.64)		0.00 (0.03)
District (Kreuzberg)		reference	reference
~ Charlottenburg		-0.04 (-0.35)	-0.04 (-0.34)
~ Prenzlauer Berg		-0.10 (-0.81)	-0.10 (-0.80)
~ Wedding		-0.46*** (-3.58)	-0.46*** (-3.54)
~ Marzahn		-0.44*** (-3.46)	-0.44*** (-3.42)

*Note.* Models 1-3 are estimated using fixed effects specification for participants. Numbers in parentheses denote the t-values. N= 67; number of obs= 332; Significance levels: \*: p< 0.05, \*\*: p<0.01 \*\*\*: p<0.001; Data: ACT-Trust 2013

Figure 1. Mean transfers across neighborhoods

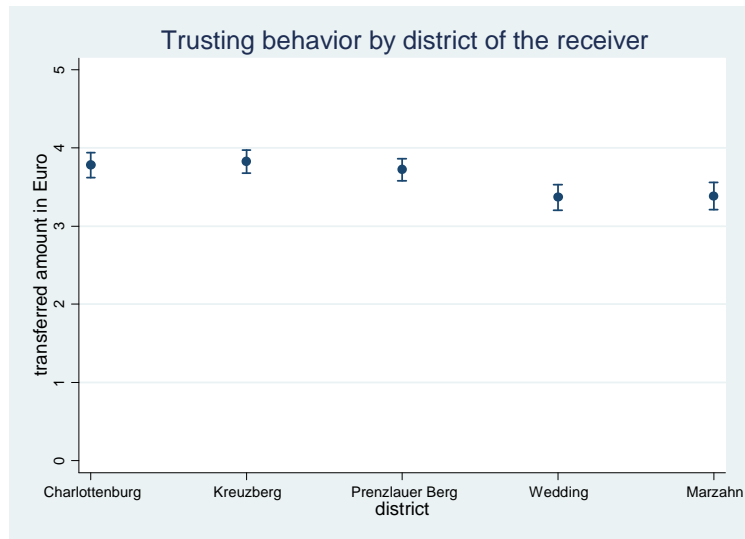


Figure 2. Expected return ratios by neighborhood

