

## Social Capital Across Urban Neighborhoods: A Comparison of Self-Report and Observational Data

Jessica M. Hill

Netherlands Institute for the Study of Crime and  
Law Enforcement (NSCR), Amsterdam,  
The Netherlands

Ruth Jobling

Newcastle University

Thomas V. Pollet

VU University Amsterdam

Daniel Nettle

Newcastle University

Previous self-report survey research has demonstrated significant variation in social trust and neighborhood social ties between two neighborhoods of contrasting socio-economic fortunes within the same English city. Residents in a deprived neighborhood reported that they trusted their neighbors less and had fewer social ties within the neighborhood than residents in an affluent neighborhood. We carried out direct behavioral observations in these neighborhoods to determine whether this difference was apparent in behavior on the streets. We found that people were less likely to be alone and adults were more likely to engage in social interactions with other adults in the deprived neighborhood than in the affluent neighborhood, indicating a more active social life. We argue that self-reports about social interactions are not simple objective descriptions of those interactions, but involve adding interpretation and meaning to them. We highlight the importance of observational data for exploring cultural differences within and between societies.

*Keywords:* social trust, behavioral observation, self-report, neighborhood differences, social capital

Levels of trust vary greatly between countries, with over 50% of Scandinavians reporting that most people can be trusted compared with less than 10% among Brazilians and Turks (Delhey & Newton, 2005). Trust within coun-

tries also varies greatly. Nettle and colleagues found that within one U.K. city, trust between residents was up to 30% lower in more deprived than more affluent neighborhoods (Nettle, Colléony, & Cockerill, 2011). The origins of variation in trust and related social attitudes is an important topic of inquiry within evolutionary behavioral science, but relatively little research has considered how these self-reported attitudes relate to people's actual behavioral routines. The aim of the current study is to explore whether differences in self-reported levels of social trust between neighborhoods are reflected in measurable differences in people's behavior on the streets of those neighborhoods.

When we trust we believe in the honesty and the intention of an individual, group or organization to behave cooperatively (Van Lange, van Vugt, Meertens, & Ruiter, 1998). Trust therefore facilitates cooperation, a topic of great significance and discussion in evolutionary behav-

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Jessica M. Hill, Netherlands Institute for the Study of Crime and Law Enforcement (NSCR), Amsterdam, The Netherlands; Ruth Jobling, Centre for Behaviour and Evolution, Newcastle University, Newcastle, United Kingdom; Thomas V. Pollet, Department of Social and Organizational Psychology, VU University, Amsterdam, The Netherlands; Daniel Nettle, Centre for Behaviour and Evolution, Newcastle University, Newcastle, United Kingdom.

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Correspondence concerning this article should be addressed to Jessica M. Hill, NSCR, Postbus 71304, 1008 BH, Amsterdam, The Netherlands. E-mail: [j.hill@nscr.nl](mailto:j.hill@nscr.nl)

ioral science. Although this article will not undertake a detailed analysis of cooperation, we posit that cooperative behavior requires time, energy, and cost to those undertaking it (Wilson, O'Brien, & Sesma, 2009). It follows therefore that cooperation should confer direct and/or indirect fitness benefits to those who cooperate (West, Griffin, & Gardner, 2007). People are not indiscriminate in their cooperation, but modulate when and the extent to which they cooperate according to the setting and the other people involved. Trust thus has an important role in helping us decide when and with whom we should cooperate.

For a social group to function its members must cooperate (Wilson & Wilson, 2007) for which they need to trust each other. In this way trust becomes a key component of "social capital": a term referring to the benefits individuals gain from being part of a cooperative community (Hanifan, 1916). Putnam (2000) distinguished between two types of trust: thick and thin. Thick trust is built up over time through repeated interactions and is found between family and friends, our social network and people with whom we have strong personal ties. Thin trust is of the anonymous "other" and includes trusting strangers or people with whom we have weaker social ties. It is thin trust, generalized social trust, which is associated with higher social capital and hence better outcomes at a neighborhood (Gibson, Zhao, Lovrich, & Gaffney, 2002) as well as national level (Delhey & Newton, 2005).

Attachment to the neighborhood predicts social trust (Li, Pickles, & Savage, 2005) and informal social ties among neighbors have been shown to reduce mistrust within a community (Ross & Jang, 2000). In addition to this, Li, Pickles, and Savage (2005) suggested that people in advantaged positions are likely to have the resources and competencies to draw on more formal social ties to get ahead, whereas disadvantaged people rely more heavily on informal neighborhood relations. Therefore, if informal neighborly ties predict social trust, and disadvantaged communities are likely to draw more from these than advantaged communities, we would expect trust to be higher among residents in deprived neighborhoods. This is in contrast to the findings of Nettle, Colléony, and Cockerill (2011) who found that trust between residents as reported by a questionnaire was

significantly lower in a deprived neighborhood than in an affluent neighborhood. Residents in the deprived neighborhood also reported weaker neighborhood attachment with fewer social ties than residents in the affluent neighborhood. Ross, Mirowsky, and Pribesh (2001) also found that in deprived communities trust between community members is generally low. It would seem that needing or relying on social ties does not necessarily equate to having more of these social ties. A possible reason for the lower reported trust within these neighborhoods is that deprived neighborhoods present a harsher, less predictable environment in comparison with the safe and stable environment in affluent neighborhoods (O'Brien, 2012; McCullough, Pedersen, Schroder, Tabak, & Carver, 2013). Residents of deprived neighborhoods have fewer material and knowledge resources than those of affluent neighborhoods. Therefore, the consequences of incorrectly trusting are likely to be more costly for an individual living in a deprived neighborhood, than for an individual in an affluent neighborhood, hence they report lower levels of trust.

Research examining trust and social capital usually measures these concepts using surveys, either collected remotely (mail, telephone) or by face-to-face interview. However, self-report surveys often fail to define exactly what is meant by trust, leaving it up to the respondent to infer their own meaning. Furthermore people motivations for trusting are rarely explored. It is possible that the level of trust within a neighborhood might be reflected in the social behavior of people on the streets, with higher social trust leading to more observable social behavior. Observing how people behave on the streets, whether they socialize together, whether they greet each other, or stop for a chat would give an indication of whether people in a neighborhood know their fellow residents and whether informal social ties exist. By using "systematic social observation" methods researchers can assess and compare "unofficial behavior" on the streets in neighborhoods (Sampson & Raudenbush, 1999), and use this to supplement self-report survey data, to build up a picture of the ecologies we live in.

Through comparing two neighborhoods of contrasting levels of deprivation, this study aimed to explore whether self-reported social trust relates to people's behavior on the streets.

We will first describe the two neighborhoods, before briefly recounting [Nettle et al.'s \(2011\)](#) findings from a self-report survey on trust and neighborhood social networks completed by residents of the two study sites. We will then go on to present the methods and findings of the novel observational study that is the subject of this article.

### Study Sites

The two neighborhoods selected as study sites have been the focus of previous research ([Nettle, 2011, 2012](#); [Nettle, Coyne, & Colléony, 2012](#)) on which the present study builds. The neighborhoods were selected due to their similarities in size, distance from the city center, layout (comprising of a main shopping street with residential areas either side), and ethnic make-up, in comparison with their contrasting socioeconomic indices ([Nettle et al., 2011](#)).<sup>1</sup> The Index of Multiple Deprivation (IMD) is a composite measure created by the United Kingdom government that indicates the degree of social deprivation within an area. A score close to zero indicates low deprivation and a score above 50 indicates a high degree of deprivation. Neighborhood A had an IMD score of 4.1 which contrasts with an IMD score of 62.3 for Neighborhood B. An indication of these differences can be seen in socioeconomic characteristics such as the higher frequency of lone parent households and people of working age receiving key state benefits in Neighborhood B, and the higher percentage of people who own their own homes in Neighborhood A (see [Table 1](#)).

### Self-Reported Social Trust and Neighborhood Attachment

In a previous study, residents from Neighborhood A and Neighborhood B ( $n = 125$ ), randomly selected from the electoral roll, completed a survey on their social network ([Nettle et al., 2011](#)). The survey asked them to indicate on a scale of 1–7 how much they trusted people in their neighborhood, how well they knew their neighbors, to what extent they had good friends locally, to what extent they liked their neighborhood, and to what extent they thought that neighbors looked out for each other. There were

Table 1  
*2011 Census Details From the Two Neighborhoods Observed in This Study*

	Neighborhood A	Neighborhood B
Total population (males)	3,532 (1,757)	4,404 (2,248)
Under 16 years	666	1,212
Median age	40	29
Population White (%)	93%	67%
Index of Multiple Deprivation score	4.1	62.3
Number of lone parent households	36	260
People of working age claiming a key government benefit	3.5%	31%
Mean number of adults per household	1.77	1.87

significant neighborhood differences on all these measures (all  $p < .001$ , all  $\eta^2 = .13$  to  $.47$ ), with people in Neighborhood B reporting that they trusted their neighbors less, knew their neighbors less, had fewer good friends locally, liked their neighborhood less, and that people looked out for each other less (see [Figure 1](#)).

Based on these findings we would expect public social behavior in Neighborhood B, the neighborhood with the higher IMD score, to indicate lower social trust and weaker social ties between residents than public behavior in Neighborhood A. However, [Nettle et al. \(2011\)](#) found that social group size on the streets was on average larger in Neighborhood B than in Neighborhood A. This could be viewed as contrasting with expectations from the self-report data indicating that social ties are weaker in this neighborhood. However, these findings are supported by literature suggesting residents from deprived neighborhoods form stronger social ties ([Li et al., 2005](#); [Ross & Jang, 2000](#)). The larger average group size reported in Neighbor-

<sup>1</sup> The ethnic make-up of the two neighborhoods was fairly similar in the 2001 United Kingdom Census, which was the source used in planning our first studies. The more recently available 2011 Census shows that the ethnic make-ups have diverged somewhat over the intervening years; see [Table 1](#). However, in Neighborhood B the area south of the main shopping street remains 79% White, with the area north of the main shopping street 55% White. These two sections of the neighborhood will be analyzed separately to check for any effects of ethnicity.

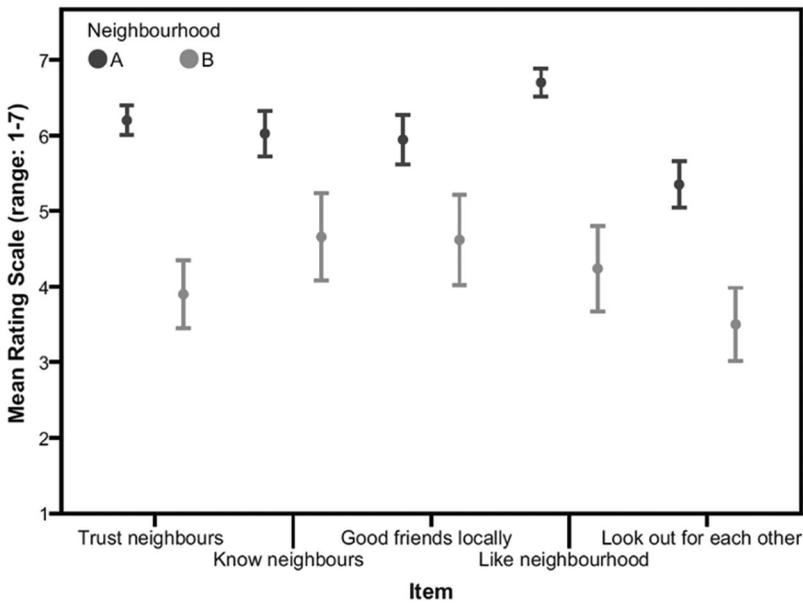


Figure 1. Summary of self-report survey data indicating, on Likert scales 1–7, how much residents ( $n = 125$ ) trust people in their neighborhood, how well they know their neighbors, the extent to which they have good friends locally, the extent to which they like their neighborhood and the extent to which they perceive neighbors look out for each other.

hood B may be a reflection of Putnam’s “thick” trust between people with strong personal ties, rather than the more generalized “thin” trust toward casual acquaintances such as neighbors. Another possibility is that residents in the deprived neighborhood seek safety in numbers (Curry, 2008; Hales, 2005), hence the larger group size. This ambiguity indicates that a measure of social group size may not necessarily be the best or only means to operationalize neighborhood social ties and social trust.

We therefore decided to carry out a further observational study in order to provide a more detailed picture of differences in public social behavior between the two neighborhoods. In particular, we wanted to explore behavior which may indicate the “thin” trust between people with weak social ties so vital to social capital, such as people engaging in casual interactions with others that they come across on the streets. With this in mind, we set out to record “new” interactions between people observed in public areas of the neighborhoods. A “new” interaction was defined as any interaction where the individuals or groups involved had not previously been in each other’s company. If this behavioral

measure of social connection does reflect the lower self-reported levels of trust and weaker neighborhood ties in Neighborhood B, then we would predict fewer “new” social interactions would be observed in Neighborhood B than in Neighborhood A.

## Method

### Sampling

Over a 2-week period, on-street observations were made for a total of 5 hr in each neighborhood. Observations were recorded in 30-min time blocks, each beginning on the hour and carried out in random order between the hours of 9 a.m. and 6:30 p.m. On two occasions the same time block was collected simultaneously in each neighborhood. For each of the remaining blocks, the same time block was sampled on consecutive days, where Neighborhood B was sampled prior to Neighborhood A on three occasions, and Neighborhood A was sampled prior to Neighborhood B on five occasions. All five weekdays were sampled at least once in each neighborhood. All observations were car-

ried out on school days during the school term. For each 30-min time block the first 10 min were spent walking the length of the main shopping street, followed by 20 min walking a random route through the residential streets. In each neighborhood the routes through the residential streets were carried out alternately on either side of the main shopping street.

### Data Recording

The majority of the observations were carried out by the lead researcher, with two 30-min blocks being carried out by the second researcher. Pilot observations in both neighborhoods established a detailed set of parameters, coding rules, and the definition of a “new” interaction. A “new” interaction was defined as when an individual or group not previously seen in the company of another individual or group engaged in conversation with each other. This interaction could include anything from fleeting greetings to prolonged conversations. The important factor was that those interacting were seen apart before the interaction began.

Observations were logged using a voice recorder. The following predetermined variables were recorded during each time block: social composition of each social group encountered, that is, number of males, females, children under 16, and infants (any small child not walking independently), as well as whether they were walking, sitting, standing, playing, or performing another activity. Groups were identified as people who were clearly walking, standing, sitting, or playing together. “New” interactions between social groups or individuals not previously in each other’s company were also noted.

### Ethics Statement

All observations were made in public areas of the neighborhoods where people could reasonably expect their behavior to be visible to others. People inside houses or in gardens surrounded by fences were not recorded. However, those in front gardens or yards in clear view of the public were recorded. No information from which an individual could be identified was recorded. The observers were able to explain the research should any member of the public have requested information regarding their intentions. However, this did not occur. The study

was approved by the Faculty of Medical Sciences ethics committee, Newcastle University.

### Results

The unit of analysis for all the following results is neighborhood, examining the differences between Neighborhood A and Neighborhood B. A larger number of people were observed in Neighborhood A than Neighborhood B (see Table 2), despite this neighborhood having a smaller population (see Table 1). Approximately the same proportion of adults were observed in the main shopping street (vs. the residential streets) across both neighborhoods (percentage of people observed on main street: Neighborhood A = 62%; Neighborhood B = 64%; Fisher’s exact test,  $p = .7$ ). Figure 2 shows the similarity of street use across the neighborhoods for adults. A similar ratio of adults to children was observed across both neighborhoods (percentage adults observed: Neighborhood A = 87%; Neighborhood B = 89%; Fisher’s exact test,  $p = .62$ ). However, many more unaccompanied children were observed in Neighborhood B than in Neighborhood A (Neighborhood A = 49; Neighborhood B = 206; Fisher’s exact test,  $p < .001$ ). Once the school day had finished, more children remained on the streets until early evening in Neighborhood B than Neighborhood A (see Figure 3).

Adult social groups, that is, groups with at least one adult present, were significantly larger in Neighborhood B ( $M = 1.25$ ,  $SD = 0.59$ ) than in Neighborhood A ( $M = 1.13$ ,  $SD = 0.42$ ),

Table 2  
Number of Individuals, Groups, and Interactions  
Observed Within Each Neighborhood

	Neighborhood A	Neighborhood B
Total number of people	1,897	1,768
Total number of adults	1,645 (87%)	1,572 (89%)
Total on high street (adults)	1,130 (1,012)	1,100 (944)
Total number of social groups (at least 1 adult)	1,472 (1,433)	1,360 (1,258)
Total number of adult social groups interacting	62	120

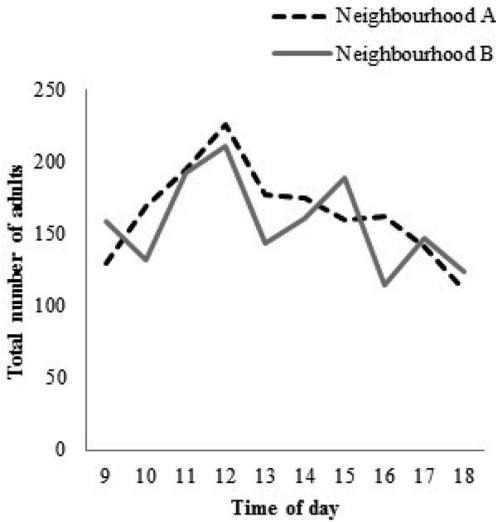


Figure 2. The numbers of adults observed on the streets for 30-min time slots on every hour between 9 a.m. to 6 p.m.

$t(2689) = 6.16, p < .001, \text{Cohen's } d = 0.28$ . Dichotomizing the data of observed adults into either a lone adult or a group with two or more adults shows that there was a significant association between neighborhood and adult social group size (Fisher's exact test,  $p < .001$ ). The odds of an adult being part of a group of two or more adults were twice as high for Neighbor-

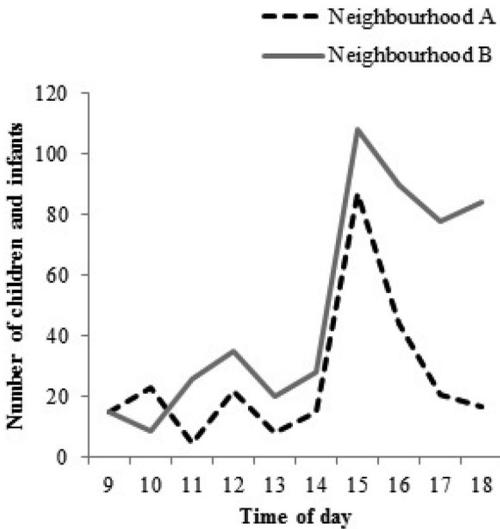


Figure 3. The numbers of children observed on the streets for 30-min time slots on every hour between 9 a.m. to 6 p.m.

hood B than for Neighborhood A (see Figure 4). For all periods of the day the probability of an adult being part of a group of two or more adults was higher in Neighborhood B than for Neighborhood A (see Table 3). When analyzing observations taken only in the residential streets the significant association between neighborhood and adult social group size remained (Fisher's exact test,  $p < .001$ ). The odds of an adult being part of a group of two or more adults in a residential street were twice as high for Neighborhood B than for Neighborhood A.

There was a significant association between neighborhood and whether adults had "new" social interactions with other adults (Fisher's exact test,  $p < .001$ ). The odds of an adult having a "new" social interaction with another adult was 2.3 times higher for Neighborhood B than for Neighborhood A (see Figure 5). The odds of an adult having a "new" social interaction with another adult in the late afternoon was nearly eight times higher for the Neighborhood B than for Neighborhood A (see Table 4). Observations taken only in the residential streets showed that the significant association between neighborhood and whether adults had "new" social interactions with other adults remained (Fisher's exact test,  $p < .001$ ). The odds of an adult having a "new" interaction with another

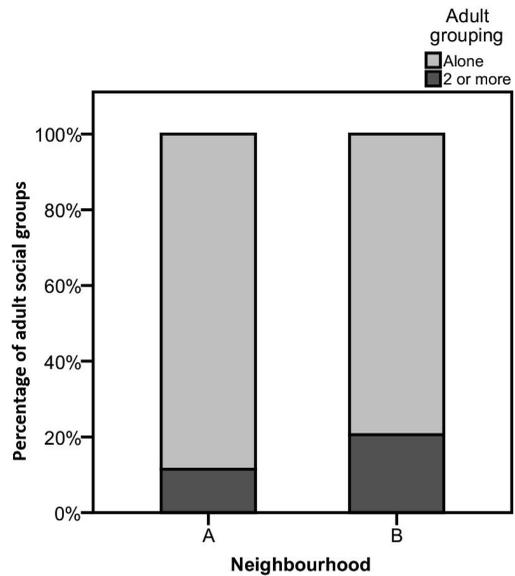


Figure 4. Comparison of adult social groups observed in the two neighborhoods.

Table 3  
*Lone Adults as a Proportion of Total Adults Observed in the Two Neighborhoods at Different Periods of the Day*

	Neighborhood A	Neighborhood B	Odds ratio
Overall (9 a.m.–6:30 p.m.)	1,268/1,433 (88.5%)	999/1,258 (79.4%)	1.99*
Morning (9 a.m.–11:30 a.m.)	389/436 (89.2%)	330/403 (81.9%)	1.83*
Afternoon (12 p.m.–2:30 p.m.)	415/481 (86.3%)	325/410 (79.3%)	1.65*
Late afternoon (3 p.m.–5:30 p.m.)	364/411 (88.6%)	279/355 (78.6%)	2.11*

\*Fisher's exact test, significant at  $p < .001$ .

adult in a residential street were 1.5 times as high for Neighborhood B than for Neighborhood A.<sup>2</sup>

### Discussion

Observations of public behavior revealed distinct differences between the two neighborhoods. Throughout the day a similar number of adults were observed on the streets in both neighborhoods. However, we found that adult social group size was on average larger in Neighborhood B than in Neighborhood A. These findings were consistent with those of Nettle et al. (2011). Furthermore, we found that, on average, adults observed on the streets in the Neighborhood B were more likely to engage in

“new” social interactions with other adults than those observed in Neighborhood A, and the difference was particularly marked in the late afternoon. This may have been due to parents in Neighborhood A interacting more with each other during and after collecting children from school than parents in Neighborhood B. These observations suggest that publicly visible social ties between residents are stronger in Neighborhood B than in Neighborhood A. If we assume social interactions to indicate trust between people the observational data suggest that not only is “thick” trust between residents, as indicated by larger social groups, greater in Neighborhood B than A, but also “thin” trust, as indicated by more these “new” social interactions. At first glance these findings appear to contrast with our predictions derived from the self-report data, which revealed lower perceived trust between residents in Neighborhood B than A, as well as weaker or fewer perceived social ties between neighbors, or “thin” social ties, and between good friends, or “thick” social ties. Our data seem to suggest that how people behave on the streets of their neighborhoods is inconsistent with what they report in surveys. How can we therefore explain the reported low trust and weak neighborly ties but active public social life in the deprived neighborhood?

Certain factors may influence individuals' general levels of trust and opinions about their neighbors, while not deterring them from socializing with fellow residents. We have a bias toward negative information (Ito, Larsen, Smith, & Cacioppo, 1998) and, therefore, if one

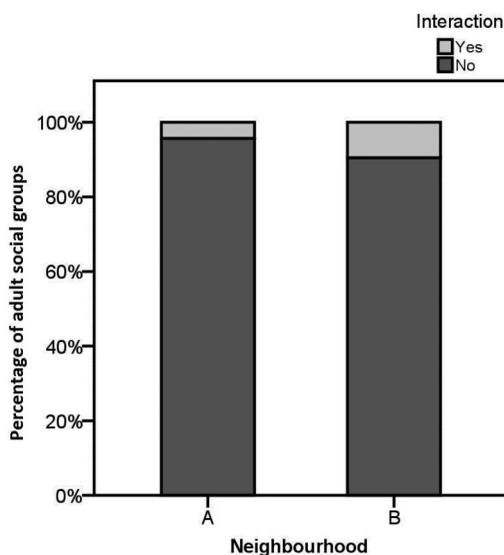


Figure 5. “New” interactions versus no interactions, a comparison between adults observed in the two neighborhoods.

<sup>2</sup> Comparing the residential streets on the south side and north side of Neighborhood B revealed no significant differences in adult social group size (Fisher's exact test,  $p = 1$ ) or in frequency of adults interacting (Fisher's exact test,  $p = .5$ ).

Table 4  
 “New” Interactions Between Adult Social Groups as a Proportion of Total Adult Social Groups Observed in the Two Neighborhoods at Different Periods of the Day

	Neighborhood A	Neighborhood B	Odds ratio
Overall (9 a.m.–6:30 p.m.)	62/1,433 (4.3%)	120/1,258 (9.5%)	2.33*
Morning (9 a.m.–11:30 a.m.)	26/436 (6%)	31/403 (7.7%)	1.3 (n.s.)
Afternoon (12 p.m.–2:30 p.m.)	28/481 (5.8%)	39/410 (9.5%)	1.7 (n.s.)
Late afternoon (3 p.m.–5:30 p.m.)	6/411 (1.5%)	37/355 (10.4%)	7.87*

\* Fisher’s exact test, significant at  $p < .001$ .

family on your street regularly behaves antisocially, this may affect your response to a question about neighborhood trust, despite you having good relationships with other neighbors. Likewise, although you might trust your neighbors to keep an eye on your children when they are playing on the streets, you might not trust them to report a crime or lead a lawful life.

The mixed picture of trust and social ties presented here potentially brings together two contrasting points of view within the literature. One line of reasoning posits that adversity, for example low socioeconomic status, leads to mistrust, distress, and increased anger because it is characterized by a threatening environment, a lack of resources, and a reduced personal control (Ross, Mirowsky, & Pribesh, 2001). The potential consequences of mistakenly trusting others are therefore more serious for those in adverse conditions. Furthermore, if the people around you are in a similarly precarious position to yourself, they cannot necessarily be relied upon to behave consistently (Ross & Mirowsky, 2003). In contrast, others have argued that the more adverse or uncertain conditions become the more prosocially people behave (Andras & Lazarus, 2005; Piff, Kraus, Côté, Cheng, & Keltner, 2010). People of lower socioeconomic status tend to orientate more toward the social environment than those with higher socioeconomic status (Kraus, Piff, & Keltner, 2009). Their lack of resources means they are more likely to need to recourse to their social network than those with the material ability to buffer against misfortune. The need to build relations with those around you is therefore greater for residents of deprived neighborhoods. However, the very fact that they are vulnerable, that they cannot independently buffer against misfortune, results in the need for constant vigilance of the social environment they rely on.

In a deprived and disordered neighborhood the need to be vigilant is further increased by of the greater danger present in this environment (Kaplan & Gangestad, 2005): Crime levels in these neighborhoods are generally higher.<sup>3</sup> Stopping for a chat or a brief greeting in such an environment may be used for reassurance, as a cheap signal indicating that those interacting pose no threat or danger to each other. In a safer environment this signaling is more superfluous, as the threat of danger is lower. This combination of vulnerability due to lack of resources and need for vigilance due to increased danger could help to explain why people living in deprived neighborhoods behave more socially on the streets while reporting they do not trust neighbors or have many neighborhood social ties.

All of the findings discussed, including self-report and observational data, reveal marked neighborhood effects. The two neighborhoods present as culturally distinct environments, despite the fact that they are geographically less than four miles apart. This emphasizes the importance for evolutionary behavioral science of observing behavior in situ, in order to better understand how the environments in which people live shape their behavior. We cannot assume that because people respond to a question in a certain way that we can predict how this will translate into behavior in the “real” world (Nettle, 2011). Behavior has different meaning depending on the environment. If trust is indeed relational, arising from social connections and networks (Delhey & Newton, 2002; Welch et al., 2005), we would assume low trust indicates

<sup>3</sup> For example, in Neighborhood A 50 incidents of crime were reported in August, 2013; in Neighborhood B 254 incidents were reported in August, 2013 (source: [www.police.uk](http://www.police.uk)).

a lack of relationships. That the observational data showed this not to be the case indicates the importance of direct behavioral observation. Further research is needed, comparing self-report data with behavioral observations in other neighborhoods, in different cities, in order to determine whether these results are specific to the neighborhoods examined here or reflect a broader pattern of arising from socioeconomic differences.

Before concluding, several limitations of this study need to be addressed. First, possible methodological limitations will be addressed. Neither of the observers was blind to the research question. This may have accounted for bias toward seeing more interactions in the deprived neighborhood, despite this being contrary to our predictions. Further research using naïve observers would be desirable. Furthermore, due to limitations of time and resources double coding was not carried out. Although there was a clearly defined coding scheme, and the behaviors observed were straightforward, future research could nevertheless address this, possibly through the use of video recordings. Collecting observations at the weekend as well as on weekdays to ensure the differences observed are not the result of a higher unemployed population in the deprived neighborhood would also be desirable. We note, however, that although more unemployed adults may have led to greater the numbers on the streets in the deprived neighborhood, those adults do make the choice to be on the streets (they could stay in their homes) and to interact with one another.

It is also important to again highlight that this study examined neighborhood effects. From the differences we found between neighborhoods we cannot and do not make any assumptions about how this may translate into differences between the behavior of individuals in the different neighborhoods. The interindividual differences may for instance be much smaller or larger than the neighborhood differences. Furthermore, we have no way of knowing whether the people observed in each neighborhood were residents or non-residents. It is likely that the main shopping street in the affluent neighborhood would attract more nonresidents than that in the deprived neighborhood. By demonstrating that the pattern of results was the same within the

residential streets we have attempted to address this possibility somewhat. However, it is possible that the proportion of nonresidents observed differed between neighborhoods on the residential streets too, for example with more nonresidents using residential streets for parking while visiting the main shopping street in the affluent neighborhood. In addition, there is the issue of nonindependence of observations. Although this is not necessarily an issue that would affect one neighborhood more than the other, observing and recording the same people or groups repeatedly over the different observation periods may have influenced our results. For instance, there may be a subgroup(s) of highly sociable residents in Neighborhood B driving the appearance of a more active social life in this neighborhood than in Neighborhood A. These limitations serve to highlight the need for continued research examining a wider range of neighborhoods across other cities and countries.

In summary, the observational data presented emphasize cultural differences in the use of public spaces that can arise within a small geographical area. That the behavior on the streets did not reflect our expectations based on the self-report data indicates that social interaction performs different functions and has different meaning depending on the nature of the environment in which it occurs. Several influential researchers in the social sciences have highlighted an overreliance on self-report data, publicly calling for an increase in the use of behavioral measures (e.g., Altmann, 1974; Baumeister, Vohs, & Funder, 2007; Furr, 2009). Direct observation of social behavior in the “real world,” for example by using “systematic social observation” methods, is essential in order for us understand and test the relevance of theories developed in the controlled environment of the laboratory. The social structure and conditions in which we live influence our conscious perceptions of the people around us, but also, and not necessarily in the same way, our actual behavioral routines. Along with measuring peoples’ perceptions of their environment, observing their behavior within it may provide a deeper understanding of the role of daily environmental cues. Behavioral scientists who embrace multiple methods will be able to paint a more complete picture of the diversity of behavior and its’ meaning within in our societies.

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## COMMENT

# Observing Social Interactions in Neighborhoods: Advancing Methods of Systematic Social Observation

Margaret Caughy

University of Texas School of Public Health

In their article titled “Social Capital Across Urban Neighborhoods: A Comparison of Self-Report and Observational Data,” Hill and her colleagues (2014) make an important contribution to the field of evolutionary behavioral sciences by tapping into the methods of systematic social observation in their study of how communities shape the social behaviors of residents. Although systematic social observation (SSO) has been used for some time in the fields of criminal sociology (Perkins, Meeks, & Taylor, 1992; Sampson & Raudenbush, 1999; Taylor, 1997) as well as public health (Schaefer-McDaniel, Caughy, O’Campo, & Gearey, 2010), this is the first time it has been applied in the field of evolutionary behavioral sciences. A growing body of public health research has documented how structural inequities disproportionately affecting economically impoverished neighborhoods, such as higher rates of crime and social and physical disorder and inadequate resources, contribute to health inequities over and above individual differences in personal characteristics and behaviors (Diez-Roux, 2007; Sellström & Bremberg, 2006). SSO methods have played an important role in this research, primarily in documenting links between the physical conditions of neighborhoods and a wide range of health outcomes and related behaviors including cardiovascular health, physical activity, obesity, sexually transmitted diseases, and child and adolescent well-being (Schaefer-McDaniel et al., 2010).

One aspect of neighborhoods presenting measurement challenges to neighborhood researchers

is the social characteristics of communities. We know that the connections between neighborhood residents accrue benefits for individual residents in terms of social support, access to resources, and propagation of community norms of behavior. Researchers have relied primarily on survey methods to assess neighborhood social characteristics by asking residents the degree to which they perceive social connectedness to be present in their community. Relying on survey methods raises a host of issues that affect the reliability and validity of resulting measures. Observational measures of neighborhood social characteristics have generally been limited to documenting physical characteristics that indicate neighborhood “territoriality” (Perkins et al., 1992), an indirect measure of cohesion, or documenting the number of people observed in the community (Perkins & Taylor, 1996; Schaefer-McDaniel et al., 2010).

Hill and colleagues’ (2014) work addresses the problem of how to quantify the degree of connectedness in a community, in part, by documenting the number of new interactions occurring between individuals out in the neighborhood during the observation period. Although Hill et al. focus on these observations as a proxy for community trust, they are more accurately described as proxies of social cohesion. One could debate endlessly which comes first: whether more trust results in more visible interaction among community residents or vice versa. Regardless, the approach Hill et al. use to quantifying social interaction represents an important contribution to SSO methodologies. As we move forward incorporating their observational methods in the implementation of SSO, I make several recommendations that will hopefully increase the utility and validity of these approaches for purposes of inquiry in multiple disciplines, including both public health and evolutionary behavioral sciences.

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Correspondence concerning this article should be addressed to Margaret Caughy, University of Texas School of Public Health, 6011 Harry Hines Blvd, 8<sup>th</sup> Floor, Room 112, Dallas, TX 75390. E-mail: [margaret.caughy@UTSouthwestern.edu](mailto:margaret.caughy@UTSouthwestern.edu)

### Attention to Methodological Rigor

In the systematic review of the SSO literature I conducted with colleagues (Schaefer-McDaniel et al., 2010), we noted the wide range of methodological rigor reported by those who used SSO methods. Many did not describe their methods in sufficient detail to support replication, and many did not report using any methods for assuring validity of ratings such as assessment of interrater reliability. These methodological limitations have severely hampered the ability of the field of SSO methods from moving forward, and future efforts should pay particular attention to these issues. Hill et al. (2014) rightly acknowledge several limitations in their own approach, including lack of blindness to study hypotheses by those doing the ratings, lack of double-coding to assess interrater reliability, and insufficient variability in the times of observations. Replication of the Hill et al. approach should aim to rectify these shortcomings. If the researcher has an a priori hypothesis regarding the social behavior being observed, care must be taken to keep the observers naïve regarding that hypothesis lest this awareness bias their assessments in subtle but measurable ways. Likewise, it is important to establish that different observers would make similar ratings. Assessing interrater reliability of the observations of social interactions would present a challenge differing from other SSO methods, which focus on assessing relatively static neighborhood characteristics such as the conditions of physical spaces. However, observations of neighborhood social interactions could be conducted using two observers rating interactions independently. Such an approach is common in other areas of behavioral sciences research that rely on observations of human behavior.

Observing human behavior in a neighborhood also heightens the importance of paying special attention to the timing of observations. Although Hill et al. (2014) conducted observations during randomly selected 30-min periods between 9 a.m. and 6:30 p.m., all observations were conducted on weekdays. In addition, observations were summated over all observation periods. It might be useful to disaggregate data and examine variation in interaction patterns across the day as well as between different days of the week. This might provide a different picture of neighborhood social interactions than

simple summary statistics. For example, Linda Burton's (1991) in-depth study of a high-risk neighborhood with a prolific illegal drug trade indicated that social interactions changed dramatically throughout the day, with families and children out in the community during the morning and early afternoon and drug dealers and users out in the late afternoon and evening. Social interactions observed in such a community at 10 in the morning would have very different implications from social interactions observed at 6 in the evening.

### Variability in Poor Neighborhoods

It is important to recognize that not all poor neighborhoods are the same. Simply focusing on average levels of economic conditions often masks important variability in other domains. In Figure 1, I have displayed average levels of neighborhood cohesion from two prior studies, one in Baltimore (39 census block groups) and the other in Houston (100 census tracts; see Caughy & Franzini, 2005; Caughy, O'Campo, & Muntaner, 2003, for details). Although measures of neighborhood cohesion were slightly different in the two studies, what is striking is the degree of variability in cohesion in neighborhoods considered to be high in economic impoverishment. In both cities, the range of neighborhood cohesion within poor neighborhoods was very wide, with some poor neighborhoods having higher levels of cohesion than nonpoor neighborhoods in their same city. As I have discussed elsewhere (Caughy, O'Campo, & Brodsky, 1999), the heterogeneity of low-income neighborhoods is important to keep in mind when trying to understand community dynamics and their implications for the well-being of residents. Blanket generalizations about the characteristics of low-income neighborhoods are often incorrect.

### Conclusion

In summary, the methods reported by Hill et al. (2014) represent an exciting addition to SSO methods. Quantifying the level of neighborhood social interaction not only provides a means for validating survey methods of neighborhood social cohesion, it also provides new ways in its own right for studying neighborhoods. For example, such observations could provide a proxy

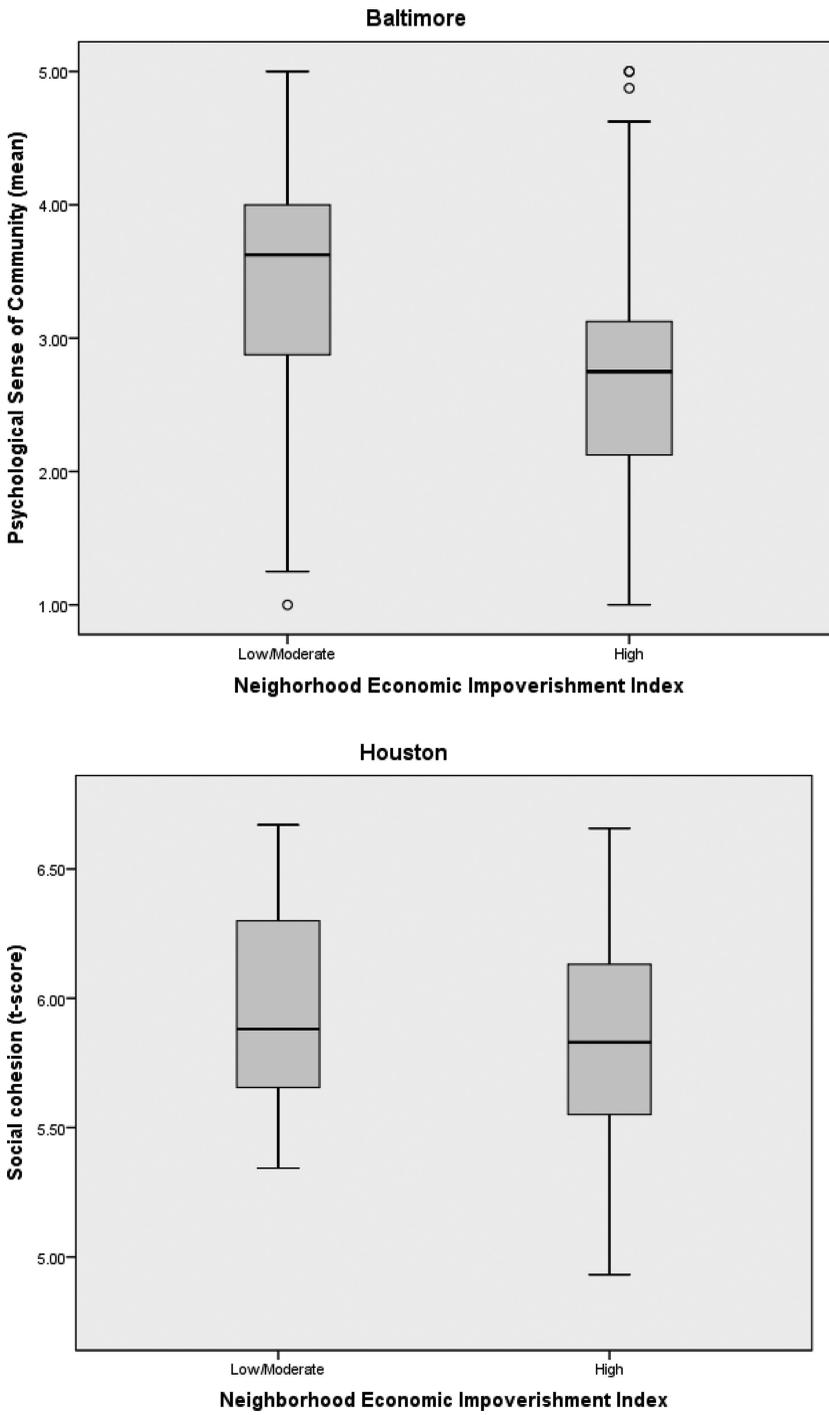


Figure 1. Variability in neighborhood cohesion in two U.S. cities.

for the density of social networks in the community and could be used to examine how public health information or interventions are disseminated through communities that differ in social network density. Similarly, neighborhood social interactions could be examined as an outcome that might change as a result of community capacity-building activities. High-quality, methodologically rigorous replications of this observational strategy will increase the odds that this approach will make significant contributions to neighborhood research.

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## COMMENT

# Harnessing the Combined Power of Convergent Research Methods and Evolutionary Theory to Promote a Unified Human Science

Daniel J. Kruger  
University of Michigan

The overreliance on specific research paradigms and procedures can constrain the progress of science, especially with research on humans. There is increasing attention to the issue of participant sampling in psychological research, including considerable recent attention from [Henrich, Heine, and Norenzayan's \(2010\)](#) article highlighting the reliance of behavioral science on participants from Western, educated, industrialized, rich, and democratic (WEIRD) societies. [Henrich et al. \(2010\)](#) advocated caution in making interpretations about human psychology and behavior based on samples from these populations, which may be particularly unusual in many relevant aspects compared to most individuals in human history. This challenge is especially pertinent for evolutionary researchers, who often seek to identify human universals. A recent comparison showed that 65% of articles in a leading evolutionary psychology and behavior journal used WEIRD study samples, compared to 96% in a leading personality and social psychology journal ([Kurzban, 2013](#)).

Methodological narrowness is also a relevant concern. Just as WEIRD samples, though useful and appropriate for some purposes, constrain our abilities to make broad inferences, overreliance on single methodologies for data collection also constrict our depictions. Self-report survey research has been a central feature of social psychological research and is increasingly used by researchers in other areas. The availability of online survey platforms such as Qualtrics<sup>TM</sup> and Survey Monkey<sup>TM</sup> has considerably expanded the quantity and proportion of

psychological and behavioral research conducted by self-report surveys.

Self-report survey research has tremendous potential for providing insights when used appropriately. The reigning popularity of surveys may be due in part to the perception that they are easy to conduct, despite the considerable training necessary for expertise in survey research. Most nonexperts would not consider manufacturing their own pharmaceuticals, though the domains of psychology may be more tempting for amateurs because they seem more familiar and intuitive. In addition to the issue of adequate expertise, an overreliance of self-report surveys for drawing conclusions may lead to systematic weakness in the depictions of human psychology and behavior. Self-report surveys are better conceived as one component in a holistic approach for assessment.

[Hill, Pollet, and Nettle \(2014\)](#) integrated survey research with behavioral observations in the naturalistic environment of the streets of an English city. This study combining data gathered through different methodologies is an initial step toward a convergent science. Survey and observational data can complement each other to provide a more holistic understanding of a phenomenon. In this case, the resulting interpretations are discrepant, generating a need for further research to clarify the relationship between neighborhood affluence and social engagement. Like survey research, behavioral observations may seem easy to conduct, but proper research requires adequate sophistication. Observational research in psychology may have declined due to its association with behaviorism, following the zeitgeist shift away from behaviorism and toward cognitive science. It may also take more time and effort than passing out a survey to a captive audience, whether in a classroom or over the Internet. This was an unfortunate loss for the field.

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Correspondence concerning this article should be addressed to Daniel J. Kruger, 1420 Washington Heights, Ann Arbor, MI 48109-2029. E-mail: [kruger@umich.edu](mailto:kruger@umich.edu)

As Medieval European monks preserved the written vestiges of civilization through chaotic centuries, a relatively small group of scientists has continued the tradition of observational human research during the reign of social-cognition. These scientists, mostly affiliated with the International Society for Human Ethology ([www.ishe.org](http://www.ishe.org)), are currently reviving ethology and restoring observational research to its rightful place as a critical means for understanding human behavior. Some of this research tests hypotheses that would be difficult to examine with survey methods (e.g., Ahmad & Fisher, 2010; Finkel & Kruger, 2012), other work provides insights that are remarkably novel in areas that are already heavily researched (Richer & Coates, 2001). Human ethology has the additional advantage of being deeply grounded in evolutionary theory.

Readers of EBS need not be lectured on the power of an evolutionary perspective, it is the only theoretical framework that can truly unite the life sciences and answer the fundamental “why” questions underlying psychology and behavior. Rather, note that Hill, Pollet, and Nettle (2014) have applied this most powerful theoretical framework to issues in the world outside of the halls of the academy. As Kurt Lewin remarked, “there’s nothing so practical as good theory,” and there may be no better use for the best theory than to apply it in the study of real world issues and challenges. This is also a perspective gaining momentum, in groups such as the Association for Politics and the Life Sciences ([www.aplsnet.org](http://www.aplsnet.org)) and the Applied Evolutionary Psychology Society ([www.aepsociety.org](http://www.aepsociety.org)). Darwinian Medicine (e.g., Stearns & Koella, 2008; Williams, & Nesse, 1996) has made considerable progress in the practical understanding of human physiology (and other issues) to inform the health care sector. The evolutionary perspective on psychology and behavior may hold even greater potential for advancing understanding in a wide range of domains including public health (Kruger, 2011), urban studies (O’Brien, 2012), and consumer behavior (Miller, 2009; Saad, 2011).

The human environment has changed considerably in the past 10,000 years with advancing technology and social change. The number and size of human populations living in foraging societies is steadily decreasing. In the past century, humans have increasingly populated urban

areas and the proportion of people living in cities continues to increase. The World Health Organization’s Global Health Observatory predicts that 7 out of 10 people will live in a city by 2050. Fortunately, there is increasing attention to the sustainability of urban design both in terms of ecological impact and for promoting health societies. Applying insights from psychology to improve the human built environment is not new (e.g., Frumkin, 2001). The notion of defensible space (Newman, 1972) has influenced some designers for decades. The current article (Hill, Pollet, & Nettle, 2014) is just the latest installment in a productive research program using an evolutionary framework to examine urban spaces (e.g., Nettle, 2012; Nettle, Coyne, & Colleony, 2012). This is a critical development for urban studies, as the current explanatory frameworks are often entirely proximate, as is the case with other areas of applied social science.

Evolutionary theory, especially life history theory, holds great promise for advancing the application of human science to pressing individual and social issues. This framework has generated remarkable empirical support for understanding important issues ranging from adverse birth outcomes (Kruger, Clark, & Vanas, 2013; Kruger, Munsell, & French-Turner, 2011), adolescent violence and delinquent behavior (Kruger, Reischl, & Zimmerman, 2008; Wilson & Daly, 1997), risk-taking (Chisholm, 1999), stability in romantic relationships (Belsky, Steinberg, & Draper, 1991), parenting (Quinlan, 2007), and mortality patterns (Kruger & Nesse, 2006). There is much more than the area of sexual attraction and relationships often associated with an evolutionary approach. Many of the predictions confirmed in these studies would not have emerged from standard theoretical approaches. Hill, Pollet, and Nettle’s (2014) article may be most remarkable not for its specific research findings but as an exemplar of the most fruitful approach for the next century of human science.

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