Data-Driven Crime Prevention:
New Tools for Community Involvement and Crime Control

The idea of the "community" is critical to community oriented policing, yet many community policing efforts underestimate the role that residents play in crime control, or simply play lip service to community involvement. While police play an important role in crime control and are legally authorized to do so, the vast majority of crime control actually results from the everyday activities of citizens. An effective crime control strategy is one that not only acknowledges and embraces the importance of regular citizens in preventing crime but seeks to enhance their ability to do so.

The recent revelation in Cleveland, Ohio where three young women were kidnapped and held captive for ten years raises important questions about how neighborhoods and residents function. Two neighbors intervened and rescued the three young women after hearing screams from the house. And while the captor is to blame for the kidnapping and treatment of these women, one wonders what was happening in the neighborhood. Did residents know each other? How isolated were they from each other? How trusting were they? For the persons who called the police, what made them do something about the problem? What made them care about safety and crime prevention? What makes any of us do something about a problem within our neighborhoods?

To answer these questions we need to understand the basis for neighborhood crime control and how to enhance and strengthen the role of residents in maintaining and sustaining crime control efforts. This essay discusses previous research efforts and our research on collective efficacy in Miami-Dade County, Florida (Uchida, Swatt, Solomon, & Varano 2013; Swatt, Varano, Uchida, & Solomon 2013). We describe how neighborhoods and residents function and how collective efficacy and social cohesion within those neighborhoods can assist in crime reduction and prevention. We explain how data from community surveys, systematic observations, and Crime Prevention Through Environmental Design (CPTED) assessments are necessary ingredients for data driven crime prevention. Based on our research, we provide a strategy for implementation and action.

The Structure of a Neighborhood

Neighborhoods can be defined in many ways. They have been characterized as places where a large number of citizens share a common geographic living space. Neighborhoods often have 'names' that residents use to identify the area (e.g., Little Havana or Liberty City in Miami, SoHo in New York City, and Chinatown in San Francisco). Neighborhood boundaries may be officially defined by local government or they may be organically defined through patterns of land use. Things like major thoroughfares and streets, railroad tracks, commercial zoning, waterways, green space (parks and such), and even physical barriers (gates, fences) may serve as the boundaries of a neighborhood.

Neighborhoods themselves serve critical functions for the residents that live in them. Children play and grow in neighborhoods and go to schools near or within their neighborhoods. Adults may socialize or work in neighborhoods and frequently interact with other residents. Neighborhoods offer residents nearby services such as schools, churches, libraries, community centers, parks, medical facilities, grocery stores, child care centers, commercial stores, entertainment facilities, and other establishments. We call these "anchor points" and they often serve alternative social functions beyond their main purpose: research has shown that these locations are areas where neighborhood residents interact, share information, and form social ties.

Some neighborhood establishments may also create problems. Bars, pawn shops, liquor stores, public transportation centers, shopping centers, fast food restaurants, and other types of establishments have been associated with increased crime. These types of establishments can be "crime attractors" or "crime generators" and are often at the center of hot spots of crime. Many problem-oriented policing (POP) efforts involve identifying these areas and POP projects take steps to address the factors producing crime. Importantly, certain types of areas may serve as an anchor point in one neighborhood and a crime generator in another. For example, in one neighborhood a park may be a place where children play, people exercise and picnic, and adults socialize. In another neighborhood, a park may be a place where drug sales occur, homeless people sleep, or gangs hang out, and may be a center for violent crime.

Collective Efficacy and Social Cohesion

Within a neighborhood, the way in which people interact, share common goals and values and trust one another are associated with levels of crime. We focus on two aspects of neighborhood social functioning: collective efficacy and social cohesion. We define *collective efficacy* as the collective ability of residents to produce social action to meet common goals and preserve shared values. *Social cohesion* refers to the emotional and social investment in a neighborhood and sense of shared destiny among residents.

When residents meet with each other and interact, they form social ties or acquaintanceships. In well-functioning neighborhoods, there will be a large number of social ties between residents; while in poorly-functioning neighborhoods there will be a lot fewer of them. Obviously, some of these social ties will be more intense, leading to friendships. Kinship is another form of social ties between residents, and often grandparents, cousins, uncles and aunts, and other relatives live in the same neighborhood. Ultimately, these social ties are the glue that helps bind neighborhood residents together.

These social ties represent a resource for the residents living in a neighborhood. Residents living in neighborhoods with close social ties tend to watch out for each other and their property. For example, they will make sure their kids are not getting into trouble, assist in shoveling snow off of sidewalks, monitor people hanging out in the neighborhood, and generally provide a sense of safety within the neighborhood. Collective efficacy therefore refers to the degree to which you trust your neighbors to provide this sense of safety, and to intervene if something problematic happens. Intervening can include things like calling the police, asking questions of strangers, notifying parents if their children are misbehaving, forming community groups to address

problems, or at a higher level, attending city council meetings to request assistance from government.

Social cohesion, on the other hand, refers to the emotional and social connection that comes with close social ties – it is the "sense of community" shared by residents of a neighborhood. In neighborhoods with high social cohesion, residents trust each other and experience a sense of belonging in the neighborhood. This sense of belonging comes from an increased emotional, social, and economic investment into the neighborhood – areas where people own homes, send their kids to local schools, and "put down roots" tend to have higher social cohesion.

Collective Efficacy and Social Cohesion: Findings from Research

Over the years, research shows that neighborhoods with higher collective efficacy experience lower rates of violent crime. Additionally, residents perceiving higher levels of social cohesion experience less fear of crime. This research suggests that one way to reduce crime is to encourage the development of collective efficacy and social cohesion within neighborhoods. Essentially, this means that residents must take responsibility for their neighborhoods and engage in crime control.

Research on neighborhood social functioning demonstrates that certain neighborhood conditions make things difficult to develop collective efficacy and social cohesion. Neighborhoods where residents come and go and stay for only short periods of time experience lower levels of collective efficacy and social cohesion. Poorer neighborhoods and neighborhoods where residents have lower levels of education and lower levels of employment also experience lower levels of collective efficacy and social cohesion.

But even within poorer neighborhoods and areas of high transiency, our research in Miami found pockets of people or 'micro-targets' who *do* care and trust one another. The challenge is to find them and not to generalize and place stereotypes on larger neighborhoods.

In Miami we conducted surveys of residents and observed environmental and social conditions. We asked residents about their views of their neighborhood, their use of anchor points in the neighborhood, their willingness to do something about a problem, their views about incivilities and fear of crime, and their satisfaction with police services.

We found that:

- Older residents perceived more collective efficacy and social cohesion than younger residents;
- Residents who used income assistance perceived lower levels of collective efficacy;
- Women perceived lower levels of social cohesion;
- Residents who owned homes had higher perceptions of social cohesion than those who were renters; and
- Residents who used neighborhood resources had higher perceptions of social cohesion.

We found that higher perceptions of collective efficacy were associated with knowledge of community meetings, more frequent use of neighborhood grocery stores, and more frequent use of neighborhood parks.

Higher perceptions of social cohesion were associated with participation in volunteer activities within the neighborhood, higher frequency of use of neighborhood medical facilities, higher frequency of use of neighborhood parks, and home ownership.

Additionally, our findings confirm that both perceptions of collective efficacy and social cohesion were important in predicting perceptions of incivilities (graffiti, litter, etc.), but the impact of social cohesion was more pronounced. That is, if people have a high level of working trust in their neighborhood (social cohesion), then they have a low tolerance for graffiti, litter, vacant buildings and other disorders (incivilities). Those same people also believe that their neighbors are willing to intervene in problems and that they have a low tolerance for incivilities.

Perception of social cohesion was a significant predictor of fear of crime, but perception of collective efficacy was not. That is, if people have a low level of working trust in their neighborhood, then they have a higher level of fear of crime. Their belief that others are willing to intervene or not (collective efficacy) has no impact on their perception of fear of crime. Similarly, if people have a high level of trust in their neighborhood, then they have a lower level of fear of crime. Once again, perception of collective efficacy has no effect on perceptions of fear of crime.

Role of the Police

There is no doubt that police play an important role in keeping neighborhoods safe. In earlier studies we have found that police involvement has a direct impact on fear of crime, satisfaction with police services, and incivilities (Uchida & Forst, 1994). Evidence from field experiments in Houston, Newark, Flint, Michigan, and Baltimore have served to validate the theory that closer ties between the police and the community, raise levels of citizen satisfaction with police services and quality of life and lower their levels of fear of crime. In fact, the philosophy of community-oriented policing rests on the assumption that community engagement improves relationships between the police and the public and reduces fear of crime.

Our findings in the current study show that the police are not the only factor that has an impact on incivilities, satisfaction with police services, and fear of crime. Indeed, we now know that collective efficacy and social cohesion have similar impacts on these outcome variables depending upon the neighborhood and micro-environments. What does this mean for police? How do they play a role in the general scheme of collective efficacy?

For police, community engagement is one of three 'pillars' of community policing, the other two being problem-solving and organizational change. Community engagement has come to mean attending and participating in community meetings, working with community advisory boards to address broad issues, and providing neighborhoods with on-line crime maps and data. These methods are all well and good, but only touch the surface of what could be done to make communities safer over the long term.

Understanding collective efficacy and social cohesion would give more depth to the police role within the community. Police know that their presence and visibility have an impact on controlling behavior (formal social control). In their absence, however, people are often left to their own devices, and depending on their micro-environment, are willing to intervene or not when they are confronted with problems (informal social control).

To make things easier for the individual the police should take cues from what contributes to higher perceptions of collective efficacy in certain places -- greater use of neighborhood parks, greater use of neighborhood grocery stores, and knowledge of community meetings. For example, police may see a park as a recreational location where kids come to play, where babysitters bring their wards, where drug traffickers deal dope, where gang members hang out, or where the homeless seek shelter. If, however, they see the park as a *place* where neighbors meet to network, form social bonds, and become invested in the neighborhood, then the purpose is different and perhaps police attitudes and strategies will change. Removing the chronic offenders, the drug traffickers, gang members and the homeless through sweeps and other enforcement activities have a higher purpose than simply moving nuisances.

By understanding that the park is not just a grassy location but also a place where friendships and bonds of trust are formed within a neighborhood, then perhaps the police will commit to longer term strategies to make that place safe and keep it safe. Understanding these concepts and linkages between and among collective efficacy, social cohesion, incivilities, satisfaction with police, and fear of crime puts the police on a different plane -- it makes them realize the importance of the human element within neighborhoods and communities.

What should be done? Five Ways to Improve Crime Prevention

There are plenty of opportunities for police, municipalities, counties, community-based organizations, and policy makers to assist with social functioning. Many of these strategies fit directly within the ideals of community policing and crime prevention. But they go deeper and have the potential for more lasting change and they are based on data and analysis.

We identified five ways to improve crime prevention based on our findings:

1. **Problem Solving**
2. **Micro-targeting the Problem and Intervention**
3. **Organizing the Community and Encouraging Volunteerism**
4. **Restoring Anchor Points**
5. **Investing in Research and Evaluation**

1. Problem Solving

The core of any community/police-based program should begin with problem-oriented policing. The methodology, first defined by Herman Goldstein (1991) and implemented throughout much

of the policing world provides a deeper understanding of the nature of the problem that will be addressed. This involves the scanning, analysis, response, and assessment (SARA) of that problem. The method relies upon data and analysis, which are necessary for decision making. While Goldstein originally intended the police to follow this method, we suggest that community organizations use it as well.

In addition to police data (e.g., crime incidents, and calls for service data), communities and police should use resident survey data, systematic social observations, and Crime Prevention Through Environmental Design (CPTED) assessments. These data should be collected and analyzed especially within specific neighborhoods. Analyses of the resident survey data are important to determining the nature of collective efficacy and social cohesion within specific neighborhoods.

Problem solving also includes responding to the problem and conducting an assessment of how well the response worked. These steps make use of the data in two ways – the response is focused on specific areas or people, and the assessment re-examines the data that were used in the analysis to determine whether changes occurred as a result of the intervention.

2. Micro-targeting the Problem and Intervention

An integral part of the data analysis is the identification of "micro-targets" within larger neighborhoods. These are small, discrete areas (e.g., six to ten square blocks) where problems flourish, but also where improvements in collective efficacy and social cohesion could take place. For example, using the information collected through the resident surveys, we used *kriging* maps to locate residents who were willing to intervene or where they were invested in the neighborhood. In addition, these *kriging* maps identify areas within these neighborhoods where there are deficits in collective efficacy and social cohesion. An example of kriging maps for the Bunche Park neighborhood in Miami-Dade County is provided in Appendix 1. After identifying these areas, information from the systematic social observations and other available information should be leveraged to further understand why these pockets of high or low social functioning occur. This information is used to assist community organizations with recruitment and outreach efforts in these problematic areas.

3. Organizing the Community and Encouraging Volunteerism

In general, when it comes to crime and disorder, communities organize themselves because of a general issue (crime) or a specific need (drunk driving, residential burglaries, school safety, etc.). Police try to get people involved in community advisory boards, neighborhood watch programs, or police athletic leagues. These are all important and essential to crime prevention. Based on our findings, we think that community groups and police should also find people who are simply willing to intervene in certain situations (collective efficacy) or are invested in the community (social cohesion). The purpose of this step is to actively focus on promoting collective efficacy and social cohesion in pockets of low and high social functioning. Specifically, data and information from kriging maps and elsewhere should be used to enhance outreach efforts by existing community organizations in these areas and expand membership in these organizations.

Service organizations (public, non-profit, and faith-based) should be provided with information to help deliver needed services in these areas.

Encouraging Volunteerism. We found that volunteer efforts by community residents pay additional dividends by promoting social cohesion. For this reason, a central focus of community outreach should be devoted to promoting volunteerism within the neighborhoods surrounding a park, recreation center, and other anchor points.

4. Restoring Anchor Points

Anchor points refer to neighborhood resources like parks, community centers, or other specific places. These anchor points are frequented by neighborhood residents and serve to promote the development of social functioning. They assist residents in the development of acquaintance networks and working trust, provide opportunities to transmit information about the neighborhood to other residents, and provide residents with a sense of personal investment in the community. These specific locations can be ascertained through the residential survey.

There are a number of ways to restore anchor points. One way is through direct police intervention. We recommend a variety of strategies that focus on hot spots or chronic locations and those that target chronic offenders. Recent research shows that 'lever pulling' or focused deterrence techniques have reduced homicide and gang-related violence. Similarly, agencies that have focused on hot spots or chronic locations have also seen a decline in violence. For example, in our research in Los Angeles we found that the combination of targeting chronic locations and chronic offenders led to reductions in homicide, gun-related crime and Part 1 violent crime.

Another way to restore anchor points is to work with city officials, individuals, and community organizations to secure resources for improvements. Parks and community centers often suffer from basic infrastructure problems -- lighting, restroom facilities, or equipment are failing and need repairs.

Most importantly, however, once the anchor points have been restored, their use should be encouraged. Increasing the usage of these areas through regular activities (a 'day' at the park; kite flying, picnics, etc.) will encourage usage and convince the public that it is 'safe'.

5. Investing in Research and Evaluation

A fifth way to improve crime prevention is to engage researchers in assisting with analysis and evaluation. Continuous collection and analysis of data are essential to knowing what is going on and why. Researchers with experience in action-oriented research can help police, policymakers, and communities in their quest to reduce crime and disorder with a focus on enhancing collective efficacy and social cohesion. Conducting residential surveys, CPTED assessments, and systematic observations of areas are among the methods that researchers can do. Establishing partnerships with researchers is an important component of this strategy.

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Appendix 1: Kriging Maps of Bunche Park Neighborhood

Bunche Park is one of eight neighborhoods where Justice & Security Strategies, Inc. studied collective efficacy and social cohesion (Uchida et al 2013). We used kriging maps to interpret and analyze data within this neighborhood. The maps show clear distinctions between collective efficacy and social cohesion within micro targets.

The kriging maps for collective efficacy and social cohesion for the Bunche Park neighborhood are presented in Figure 1. Basically, these maps show the differences in how neighborhoods function. The blue areas are indications of low points or what we call "sinks". The red areas indicate high points or what we call "rises". *Social cohesion* is relatively low throughout the neighborhood with two notable sinks, blue areas in the middle and the other in the southeast corner. *Collective efficacy* shows more variation, with a noticeable "rise" or redness in the middle of the neighborhood and two prominent "sinks" to the south of the rise. There appears to be an inverse relationship between collective efficacy and social cohesion as the rises in collective efficacy correspond to sinks in social cohesion.

Although there was only a single homicide that occurred in this neighborhood, it took place near the park for which this neighborhood is named (Bunche Park). It lies in the southeastern corner of the neighborhood. The rise (red) in collective efficacy and sink (blue) in social cohesion in the middle of this neighborhood corresponds to an area of single-family homes that border an elementary school to the east. This area has been hit with a number of foreclosures during the study period, accounting for what we believe is low commitment and a low level of attachment in the community by the homeowners, but a higher willingness to intervene if they see a problem.

The two areas of lower collective efficacy (blue) also consist of single-family homes with a health center near the middle of this area. This area reflects single-family homes that border the park to the east.

Notably, the low collective efficacy areas of this community experienced substantial amounts of gang activity in recent years. This may explain the observed relationships seen between collective efficacy and social cohesion in these areas. The middle area in the community may reflect an "area under siege" as it borders two gang territories. Residents appear to be effective at mobilizing to prevent the influx of gang activity, but this state of siege has compromised any feelings of attachment and investment in the community by these residents. This further illustrates a point discussed by Sampson (2009; 2012) that high levels of familiarity and social investment in a neighborhood may not be necessary for effective mobilization.

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