Crime Analyst’s
Research Digest

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General Topics
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Introduction

Dear IACA Members,

We are pleased to bring you this edition of the Crime Analyst’s Research Digest, which focuses on a variety of topics. In this edition, we have included traditional articles on crime-centric research but have also attempted to include additional research, which we hope the IACA membership will find relevant.

Some highlights of this issue include:

- Crime-centric topics such as the crime trajectories in street segments over time, and the effectiveness of offender profiling in addressing residential burglary
- Research-related topics focusing on evaluation, such as the effectiveness of post hoc evaluations on a Problem-Oriented Policing initiative and on boundary adherence in a hot spot policing initiative
- Emerging research regarding crime and the Internet, focusing on the use of Twitter during riots and how gang and non-gang members use the Internet
- Research from the National Police Research Platform on job satisfaction for civilians in policing organizations
- An examination of the impact of crisis intervention training on officers’ knowledge, attitudes and skills in issues surrounding mental health.

Again, we hope these topics are timely and of interest. Another great resource to find more articles and practical application of these theories is the www.popcenter.org. As always, enjoy the digest and we welcome any feedback at publications@iaca.net.

Greg Stewart
Guest Editor, Crime Analyst’s Research Digest
IACA Publications Committee
An Experimental Evaluation on the Utility of Burglary Profiles Applied in Active Police Investigations
Bryanna Hahn Fox and David P. Farrington
Summary by Aaron Skinner and Jeffrey Bunn, Portland State University

Summary
Offender profiling (OP), a technique that uses crime scene information to infer the characteristics of suspects, has garnered significant attention among law enforcement agencies. Whether this practice is actually an effective strategy for investigating crimes and identifying suspects is the focus of the current study. Prior research on OP has largely focused on whether detectives find profiling helpful to their investigative process and whether “professional” profilers do better at inferring suspect characteristics than other groups of people (e.g., students, psychologists). The researchers studied whether broad use of an empirically derived profiling technique for residential burglaries could improve arrest rates for this offense. The technique, Statistical Patterns of Offending Typology (SPOT), was developed by Fox and Farrington (2012) and uses offense characteristics (e.g., type of entry, use of tools, offense planning, items stolen, building occupancy, evidence left behind) to classify burglaries into four types: 1) opportunistic, 2) organized, 3) disorganized, and 4) interpersonal. Fox and Farrington found that the offenders associated with each type of burglary varied, resulting in different suspect profiles which could be used by detectives to generate investigative leads. The research team hypothesized that a law enforcement agency using this practice would clear more cases over time as compared to similar agencies that were not using the technique.

Data and Methods
The study compared burglary arrest rates among four Florida police departments. One department received SPOT training for three weeks, while the three others did not. Researchers selected departments that were similarly located within Florida, and had similar burglary arrest rates and incident rates. To compare the effectiveness of SPOT, researchers compared burglary arrest rates among the four departments for four years before SPOT training (pre-test) and one year after SPOT training (post-test). Because selection of the departments was not randomized, researchers used statistical techniques to increase internal validity.

Findings
Analyses showed that during the pretest period, there was no significant variance in burglary arrest rates between the control (15.9%) and treatment (11.3%) agencies. After offender profiles were applied in active investigations at the treatment agency for a one-year period, their burglary arrest rate tripled, rising to 30.1%. Additional analyses found that the agency using SPOT was 3.5 times more likely to solve burglary cases than the comparison agencies. These results provide the first empirical support that the use of OP may be a useful tool for investigators to utilize in active field investigations, although additional research is necessary.

**Trajectories of Crime at Places: A Longitudinal Study of Street Segments in the City of Seattle**
David Weisburd, Shawn Bushway, Cynthia Lum and Sue-Ming Yang

Summary by Nicholas Perez & Bryanna Hahn Fox, University of South Florida, Tampa

**Summary:**
Recent criminological research has begun to look at isolated locations and the situational context of crime, rather than studying criminal behavior at just the individual or community level. Most studies on crime hot spots, which include micro-level places such as street addresses, city blocks, or street segments, have generally utilized cross-sectional data (i.e., a snapshot in time), but no analysis of patterns or ongoing trends in hot spots has been possible. The Weisburd et al. study is one of the first to conduct a longitudinal analysis (i.e., evaluation over time) of hot spots, in order to develop a better understanding of how crime is clustered and to improve the crime prevention potential for hot spot patrols.

**Data and Methods:**
This study uses official crime data from Seattle, Washington, between 1989 and 2002, to examine the distribution of crime in a variety of street segment locations. Geographical locations for nearly 1.5 million reported and locatable offenses were mapped at individual street segments. Next, a distribution and trajectory analysis were conducted to examine if, when, where, and how hot spots in the city changed over the 14-year time frame. The temporal analysis used in this study expands on prior research by allowing for a long term assessment of crime trends as well as an analysis of different trajectories and patterns of crime types for each hot spot location.

**Findings:**
Results show that many urban hot spots demonstrate tightly-clustered levels of criminal behavior over time. These places were also found to be generally stable in their crime rates, indicating that targeted efforts on these locations may be successful in reducing crime. The study also found that while there were only a small proportion of locations that experienced dramatic changes in crime rates, these places were primarily responsible for the crime rate fluctuations of the entire city. This indicates that crime drop (or increase) trends in Seattle, and other major cities, should not necessarily be seen as general city changes, but instead as a change generated by a small group of specific locations that experienced a significant crime decline or increase. This is particularly relevant for analysts concerned with resource distribution, patrol focus, and other community-based policing tactics that rely on crime rate analysis to determine the intensity, location, effect and stability of hot spots in a jurisdiction over time.

Evaluating Place-Based Policing Strategies: Lessons Learned from the Smart Policing Initiative in Boston
Anthony A. Braga and Cory Schnell
Summary by Christopher DeHart and Katelyn Bonn, Portland State University

Summary
In 2007, the Boston Police Department developed the Safe Street Teams (SST) Program to curtail the city’s rising violent crime rates. The SST program utilized community policing and problem-oriented policing (POP) strategies in hotspot areas where crime was disproportionately higher. After implementing the SST program, the city received a Smart Policing Initiative (SPI) grant to assess the effectiveness of the program. This study describes a post hoc evaluation of the SST program and demonstrates the ability of researchers to retroactively analyze policing strategies.

Data and Methods
Researchers conducted two analyses: a process evaluation and an impact evaluation. The process evaluation focused on resources utilized while implementing the program and the activities accomplished. To measure this, researchers compared the total number of POP strategies that had been implemented in each area. Researchers examined the average number of interventions carried out in each hotspot to ensure that each site was receiving similar treatments. The impact evaluation focused on whether crime problems in the hotspot areas declined, and if those declines were the result of the SST program. To measure this, researchers used propensity-score matching to produce comparative groups, pairing treatment hotspots with areas of similar crime rates where the SST program was not implemented.

Results
Researchers determined that there were four crucial questions to answer when analyzing the effectiveness of the SST program:

1) Was the intervention focused in the correct place?
2) Was the intervention correctly delivered?
3) What impact did the intervention have in hotspot areas compared to areas where no intervention was used?
4) Did the intervention eliminate crime or displace it elsewhere?

To answer the first question, researchers examined the city’s crime data and determined that the 13 hotspots chosen in the SST program held over 50 percent of the city’s robberies. The process evaluation appraised how the intervention was delivered by examining the number of environmental, communal outreach, and enforcement strategies that were implemented. A total of 396 strategies were used with a mean of 30.5 per hotspot. Similarly, the impact evaluation was used to compare the program’s results in treatment areas to areas where no intervention was implemented. Researchers found a significant 17 percent drop in all violent index crimes, and a 19 percent reduction in robberies in the treatment group. This study shows that it is possible to effectively evaluate a new policing program even when no police-researcher relationship existed prior to the program’s implementation.

Boundary Adherence during Place-Based Policing Evaluations: A Research Note
Evan T. Sorg, Jennifer D. Wood, Elizabeth R. Groff and Jerry H. Ratcliffe
Summary by Cody W. Telep, Arizona State University

Summary
While studies suggest that hot spot policing is an effective strategy that typically does not lead to significant displacement of crime, little attention has been given to ensuring that interventions are implemented only in the areas where they are supposed to be. This study examined boundary adherence during the Philadelphia Foot Patrol Experiment (Ratcliffe et al., 2011), to assess the extent to which officers remained only in their assigned beat during the study. Results suggested officers patrolled areas substantially larger than their assigned beat and that these “active beats” included areas that were part of both control group hot spots and catchment areas surrounding each hot spot used for measuring displacement and diffusion of benefits. This suggests calculations of intervention effects and displacement or diffusion could be overstated or understated, because these areas may in reality have been receiving some level of treatment as well.

Data and Methods
The authors used data collected during a series of 20 focus groups with officers who participated in the Philadelphia Foot Patrol Experiment. A total of 124 officers (51.6% of those involved in the experiment) completed a mapping exercise in which they documented the area patrolled during the study. This mapped area or “active beat” was compared to the area which the officer was assigned to patrol. Qualitative data were also gathered during the focus groups to examine officer explanations for not adhering to assigned beat boundaries.

Findings
Officer maps suggested that the active beats of officers were, on average, 0.13 miles larger than the original assigned treatment beats. These active beats overlapped with 30% (n = 18) of the control beats and 21% of the total control area. The active beats overlapped with at least part of all 54 catchment areas (77% of the total catchment area). Eight of the control beats and twelve of the catchment areas were completely encompassed by the active beats. The data suggested officers left their assigned beats for a number of reasons, including boredom with patrolling a small area and perceived displacement, as they felt criminals adapted to the intervention and moved to areas nearby. The authors caution that these data do not provide information on the frequency with which officers left their assigned beat, but do suggest greater attention should be given to boundary adherence in place-based interventions. Using GPS data to track officer location or more flexible research designs that better incorporate officer street-level knowledge should be considered in future hot spots studies.

Criminal and Routine Activities in Online Settings: Gangs, Offenders, and the Internet
Summary by Arturo Juarez, Sam Houston State University

Summary
The presence of gangs in disadvantaged neighborhoods is not a recent development. However, the increased presence and expansion of gang culture on the internet is a more recent and understudied phenomenon. This article studies the presence of criminal and deviant practices through online mediums such as Facebook, Twitter, Youtube, etc. The focus was to determine whether gangs use the internet as a platform to expand their criminal activities. The authors hypothesized that online behaviors would reflect offline or street behaviors. In essence, technological advancement is proposed as facilitating new opportunities to perform the same deviant behaviors that gangs produce in street settings.

Data and Methods
The study is based on interviews of 585 gang and non-gang youth and young adults in five different U.S. cities: Cleveland, Fresno, Los Angeles, Phoenix and St. Louis. Participants varied from those involved directly with gangs to individuals disengaged with gangs, and other respondents who had avoided gang membership entirely when the interview was conducted. Criminal records from those surveyed varied from those who had no existing interaction with the criminal justice system but were in outreach programs designed to mitigate the probability of gang involvement, to individuals who had extensive involvement and experience with the criminal justice system, and to respondents who had been processed by the criminal justice system and were serving jail time. The participants were asked about their online presence, their technological capabilities, what activities they performed online, and the kinds of opportunities created by their online usage.

Results
The study reached three main conclusions. First, about 80 percent of the respondents were found to use the internet, a rate that exceeds that of the U.S. population. Much of their behavior was generally age appropriate. It was found that gangs use the internet as much if not more than non-gang participants. The study also highlighted the technological shortcomings of gang members and found no evidence supporting claims that gang members possess the ability to use the internet for identity theft, computer hacking, and phasing schemes. Second, a large percentage of the sample (45 percent) was found to engage in online crime and deviance. The illegal downloading of media was most the most frequently reported crime; interestingly, there was little reported evidence of stealing from people online. Drug sales, the sale of stolen property, harassing behavior toward others, and the uploading of deviant videos were some of the reported behaviors of current and former gang members. Finally, gang members were found to use the internet less for instrumental purposes such as recruitment and drug sales and more for symbolic purposes, such as spreading gang propaganda.

Reading the Riots: What Were the Police Doing on Twitter?
Rob Procter, Jeremy Crump, Susanne Karstedt, Alex Voss and Marta Cantijoch
Summary by Christopher M. Sedelmaier, University of New Haven

Summary
This article is an exploratory study of the use of the micro-blogging site Twitter by various constituencies (e.g., police, other social institutions, individuals) in response to the August 2011 riots in England. Noting the complex relationship that police have had historically with the media, the authors especially seek to discover whether police use of social media was effective in responding to public order disturbance and, if less than effective, what lessons we may take away from this case.

Data and Methods
The authors obtained a sample of roughly 2.6 million public tweets sent between the hours of 1pm on August 6, 2011 and 8pm on August 17, 2011, fitting search criteria established by Guardian reporters covering the unrest. Twitter accounts were categorized as “Community Accounts” (existed prior to the onset of the riots and identified with a specific locality), “Riot Accounts” (created during the riots in response to the events), “Police ‘Force’ Accounts” (centrally-managed), and “Police ‘Local’ Accounts” (managed by teams or individual officers at a local level). Tweets were grouped by “information flows” ranked by size, and then coded for content.

Results
With few exceptions, Community and Riot accounts did not directly engage with police accounts in their largest information flows, even though these account types were very active during the sampling period. Police Force accounts and Police Local accounts, in comparison, appeared relatively inactive during the events, but the authors caution against strong conclusions as this may have been an artifact of the sampling frame or the relative lack of hashtag use among police tweets. Most police tweets – especially among Force accounts – were found to be of a broadcast nature, which suggests that in the future, police may wish to incorporate hashtags into their posts as this would ensure that they would reach anyone following that tag. Without social media strategies in place to guide engagement, such broadcast activity appears to be the most efficient use of Twitter.

The results also suggest that Twitter may be equally challenging for police departments to use as a data-gathering tool, as the sheer amount of posts available may outstrip departmental abilities to process that information. Furthermore, during a crisis event, new players (e.g., Riot accounts) emerge and the police must be agile in incorporating these new players into their data collection and dissemination practices. The authors suggest that police departments must craft social media strategies that use local contextual information to account for both broadcast and community engagement roles, and are pursuing subsequent research projects to make further recommendations on social media use.

The Place of Civilians in Policing
Megan Alderden and Wesley Skogan
Summary by Jacob Jensen, Portland Police Bureau

Summary
This study investigated civilian employee job satisfaction at nineteen police agencies of all sizes. Civilian employees performed a variety of functions at these agencies, including parking enforcement, clerical work and crime analysis. Additionally, police agencies are increasing use of civilian employees. Despite this increased presence, there is very little research on job satisfaction among civilian police employees. The authors point out that the stress associated with police work extends to civilian, as well as sworn, employees.

Data and Methods
This study was conducted as part of the National Police Research Platform. One tribal agency and eighteen municipal agencies participated in the study. Although the agencies represented all sizes and areas of the United States, it was not a random sample. Instead, the sample was selected to maximize diversity in the responding agencies. The research consisted of an anonymous Internet-based survey hosted by a third-party provider. Participation was voluntary, and the average response rate was 51 percent (472 total responses). The resulting data was analyzed using a variety of techniques, including zero-order correlations and multivariate regression.

Findings
This study found that acceptance of civilians had the strongest positive effect on job satisfaction, while emotional stress had the strongest negative effect. Pay and benefits had a significant positive effect on job satisfaction, but it was not as strong as several qualitative factors. This study's results show that there are a number of steps police agencies can take to retain civilian employees.

Approximately 78 percent of civilian employees reported being either “satisfied” or “very satisfied” with their job. The most significant contributors to job satisfaction were acceptance of civilians, race and gender equality, advancement opportunities and compensation. The most significant detractors from job satisfaction were emotional stress and workload stress. Over 12 percent of the variation in job satisfaction was attributed to organization-level differences, although the dataset was not large enough to analyze what factors contributed to this difference.

The Police-Based Crisis Intervention Team (CIT) Model: I. Effects on Officers’ Knowledge, Attitudes, and Skills

Michael T. Compton, et al.
Summary by Frank Silva, Portland Police Bureau

Summary
Individuals with serious mental illness are highly likely to interact at some point with police officers. The crisis intervention team (CIT) model is being widely implemented by police departments across the United States, to improve officers’ responses to this population. However, little research exists on officer-level outcomes. The authors compared officers with or without CIT training on six key constructs related to the CIT model: knowledge about mental illnesses, attitudes about serious mental illnesses and treatments, self-efficacy for interacting with someone with psychosis or suicidality, stigmatizing attitudes, self-efficacy for deescalating crisis situations, and referral decisions.

Data and Methods
The sample included 586 officers from six police departments in Georgia, 251 of whom had received the 40-hour CIT training (median of 22 months before the study). In-depth, in-person assessments of officers’ knowledge, attitudes, and skills were administered. Many measures were linked to two vignettes, in written and video formats, depicting typical police encounters with individuals with psychosis or with suicidality.

Findings
CIT-trained officers had consistently better scores on knowledge, diverse attitudes about mental illnesses and their treatments, self-efficacy for interacting with someone with psychosis or suicidality, social distance stigma, de-escalation skills, and referral decisions. Effect sizes for some measures, including de-escalation skills and referral decisions pertaining to psychosis, were substantial ($d = .71$ and $.57$, respectively, $p < .001$).

CIT training of police officers resulted in sizable and persisting improvements in diverse aspects of knowledge, attitudes, and skills. Research should now address potential outcomes at the system level and for individuals with whom officers interact.