



# Evidence-Based Policing

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## A LEADERSHIP WORKSHOP

*August 2011*

***Presentations and Essential Readings***



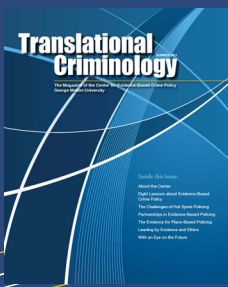
**THE CENTER FOR EVIDENCE-BASED CRIME POLICY**

*www.cebc.org*

*With support from*



HOME TO



*"The work of George Mason's Center for Evidence-Based Crime Policy...has led the way in practitioner-researcher cooperation."*

Howard Silver, Consortium of Social Science Associations  
in testimony to the U.S. House of Representatives

#### FOUR RESEARCH PROGRAMS

Crime and Place  
Evidence-Based Policing  
Systematic Reviews  
Evidence-Based Legal Policy

#### ACHIEVEMENT THROUGH TEAMWORK

8 affiliated CLS faculty  
2 research associates  
8 fully funded graduate research assistants  
12 advisory board members  
2 research working groups  
Undergraduate Interns

#### VISIT US

The CEBCP@GMU  
David Weisburd, Director  
Cynthia Lum, Deputy Director  
4400 University Drive  
MS 6D12  
Fairfax, VA 22030

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Phone: 703-993-4901

CEBCP is on Facebook

## The Center for Evidence-Based Crime Policy

at George Mason University



The **Center for Evidence-Based Crime Policy (CEBCP)**, housed within the Department of Criminology, Law and Society (CLS) at George Mason University, seeks to make scientific research a key component in decisions about crime and justice policies by advancing rigorous studies in criminal justice and criminology through research-practice collaborations, and by proactively serving as an informational link to practitioners and the policy community.

### Our goals...

- Rigorous evaluation of interventions
- Agency partnerships and co-learning
- Mentoring future criminologists
- Awarding excellence
- Facilitating scholarly collaboration
- Impacting public policy
- Serving our communities
- Creating research-to-practice translation tools
- Making evaluation resources available
- Encouraging innovation
- Advancing the field of criminal justice
- Disseminating information about evidence-based practices

### ...how we accomplish them.

- Multiple funded/unfunded projects
- Distinguished advisory board
- Congressional briefings
- Yearly symposia
- *Translational Criminology* magazine
- Systematic reviews of interventions
- The Evidence-Based Policing Matrix
- Our Video Library
- Workshops and technical assistance
- Research "one-pagers"
- The University e-Consortium
- Home to the Evidence-Based Policing Hall of Fame and the Distinguished Achievement Award
- Support from the College of Humanities and Social Sciences
- Faculty-student co-authorships





**THE CENTER FOR  
EVIDENCE-BASED  
CRIME POLICY**

at  
**GEORGE MASON  
UNIVERSITY**

*presents an*

**EVIDENCE-BASED  
POLICING  
LEADERSHIP  
WORKSHOP**

**August 2011**

[www.cebc.org](http://www.cebc.org)

*with support from*



**Bureau of Justice Assistance**

# Evidence-Based Policing Workshop

## August 15, 2011: A WORKSHOP FOR POLICE LEADERS

8:30am - 4pm ([Enterprise Hall 178](#), George Mason University, Fairfax, Virginia)

- 8:15AM Registration and check in, Enterprise Hall First Floor Lobby.
- 8:45AM Welcome, introductions, goals, and purposes of workshop, materials, and schedule (Cynthia Lum, CEBCP).
- 9:00 AM Using the *Evidence-Based Policing Matrix* (Cynthia Lum and Cody Telep, CEBCP); A practical example of the use of the Matrix to assess patrol strategies (Superintendent Howard Veigas, Derbyshire Police Force, United Kingdom).
- 10:00 AM Thinking more carefully about deployment in hot spots and sustaining place-based approaches (Christopher Koper, PERF; Deputy Chief Hassan Aden,\* Alexandria (VA) PD; Sgt. Jeffrey Egge, Minneapolis (MN) PD).
- 11:00 AM Reforming to Change (and not preserve): What can COMPSTAT and community policing teach us about integrating current policing innovations? (James Willis, GMU; with commentary by Chief Darrel Stephens\* (retired), Charlotte-Mecklenburg (NC) PD).
- 12:00 PM *LUNCH BOXES PROVIDED IN ENTERPRISE HALL, ROOM 174. Feel free to use Enterprise 181, 175, 176, 182 for lunch.*
- 1:00 PM Agency-led evaluations of the effectiveness of deployment strategies (Sgt. Renee Mitchell, Sacramento PD; David Weisburd, GMU; Chief Jim Bueermann\* (retired), Redlands (CA) PD).
- 2:00 PM Harnessing research and science to the policing craft - the challenges of evidence-based policing (Stephen Mastrofski, GMU; Chief Douglas Keen, Manassas City (VA) PD; with response from Chief Constable Peter Neyroud\* (retired), Thames Valley Police, United Kingdom, and Cambridge University).
- 3:00 PM Incorporating Research into Planning and Development - relationships with universities, the eConsortium, and the Matrix Demonstration Project (Director John Kapinos, Fairfax County (VA) PD; Cynthia Lum, GMU).
- 3:45 PM Final thoughts, announcements, and adjournment.

\* Evidence-Based Policing Hall of Fame Member

# THANK YOU

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This free workshop is supported and made possible by the Center for Evidence-Based Crime Policy, the Bureau of Justice Assistance, and George Mason University.

We especially would like to thank the presenters of this leadership workshop who volunteered their expertise and time to create one of the most unique training modules offered to police leaders on evidence-based policing. Again and again, these individuals generously give of their time to the Center for Evidence-Based Crime Policy, and it is to them that we owe our continued success.

Finally, to all of the participants present today: Your interest in making science more practical and practice more scientific reflects the core philosophies of the CEBCP, BJA, and GMU. We very much appreciate all of you taking time from your busy schedules to come to George Mason University to improve our understanding of policing.



***The Center for Evidence-Based Crime Policy***  
**Department of Criminology, Law & Society**  
**George Mason University**

Director: David Weisburd  
Deputy Director: Cynthia Lum  
[www.cebc.org](http://www.cebc.org)

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## **TAB 1: EVIDENCE-BASED POLICING MATRIX**

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Assessing the Evidence-Base of Strategies and Tactics of Uniformed Patrol in Derbyshire Police  
(*presentation by Howard Veigas*)

Evidence-Based Policing Matrix web information and screenshots

Ideas in American Policing (The Police Foundation Lecture Series): Evidence-Based Policing  
(Sherman, 1998)

Evidence-Based Policing Matrix article (Lum, Koper, and Telep, 2011)

## **TAB2: HOT SPOTS AND PROBLEM ORIENTED POLICING**

The Use of Patrol and Problem Solving at Crime Hot Spots (*presentation by Christopher Koper*)

Crime Reduction Initiative Areas: Hot Spots in Alexandria (*presentation by Hassan Aden*)

Efforts to Institutionalize Evidence-Based Practices in the Minneapolis Police Department  
(*presentation by Jeffrey Egge*)

One-Page Summary of the Minneapolis Hot Spots Experiment (Sherman and Weisburd, 1995)

One-Page Summary of the Koper Curve Principal (Koper, 1995)

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## **TAB 3: COMPSTAT AND COMMUNITY ORIENTED POLICING**

Reforming to Change (and not preserve): What can Compstat and Community Policing Teach us  
About Integrating Innovations? (*presentation by James Willis*)

Executive Summary of Maximizing the Benefits of Reform: Integrating Compstat and  
Community Policing in America (Willis, Mastrofski and Kochel, 2010)

## **TAB 4: CONDUCTING HIGH-QUALITY EVALUTIONS IN POLICE AGENCIES**

Science and Policing (*presentation by David Weisburd*)

An Example of Conducting an Experiment in the Sacramento Police Department (*presentation  
by Renee Mitchell*)

Ideas in American Policing (The Police Foundation Lecture Series): Place-Based Policing  
(Weisburd, 2008)

## **TAB 5: HARNESSING SCIENCE TO THE CRAFT OF POLICING**

Harnessing Science to Policing: Meeting Some of the Challenges to Evidence-Based Policing  
(*presentation by Stephen Mastrofski*)

Policing Science: Towards a New Paradigm (Weisburd and Neyroud, 2011)

## **TAB 6: TRANSLATING RESEARCH INTO PRACTICE**

Incorporating Research into Planning and Development (*presentation by John Kapinos  
and Cynthia Lum*)

Ideas in American Policing (The Police Foundation Lecture Series): Translating Police Research  
into Practice (Lum, 2009)



# PARTICIPATING AGENCIES

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Alexandria (VA) Police Department  
Anne Arundel County (MD) Police Department  
Arlington County (VA) Police Department  
Baltimore (MD) Police Department  
Cambridge University, United Kingdom  
Charlottesville (VA) Police Department  
Chesterfield County (VA) Police Department  
City of Fairfax (VA) Police Department  
Derbyshire Police Service, United Kingdom  
Fairfax County (VA) Police Department  
Frederick (MD) Police Department  
Fredericksburg (VA) Police Department  
George Mason University  
George Mason University Police Department  
Herndon (VA) Police Department  
Hyattsville (MD) Police Department  
Johns Hopkins University  
Leesburg (VA) Police Department  
Manassas City (VA) Police Department  
Maryland State Police  
Institute for Governmental Service and Research (MD)  
Milwaukee (WI) Police Department  
Minneapolis (MN) Police Department  
Montgomery County (MD) Police Department  
National Policing Improvement Agency, United Kingdom  
Prince William County (VA) Police Department  
Queensland Police Service, Australia  
Redlands (CA) Police Department  
Richmond (VA) Police Department  
Sacramento (CA) Police Department  
Seattle (WA) City Council and Auditor's Office  
Seattle (WA) Police Department  
Takoma Park (MD) Police Department  
United States Park Police

# PRESENTERS

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**DEPUTY CHIEF HASSAN ADEN** has served with the Alexandria (VA) Police Department (APD) since 1987 and was appointed Deputy Chief in 2009. He has held numerous administrative, investigative and operational assignments in the APD. Deputy Chief Aden is currently assigned as the Patrol Operations Bureau commander. He received a Master of Public Administration Certificate in 2007 from American University's Institute for the Study of Public Policy Implementation. In December 2009, he received a Master of Public Administration from American University. He is a member of the International Association of Chiefs of Police and the Police Executive Research Forum. He also serves as an assessment team leader for the Commission on Accreditation for Law Enforcement Agencies.

**CHIEF (RET.) JAMES BUEERMANN** was Chief of Police in the Redlands (CA) Police Department from 1998 until his retirement in June. He is currently an Executive Fellow at the National Institute of Justice. He sits on the advisory boards of the Center for Evidence-Based Crime Policy (CEBCP), Cambridge University's Police Executive Programme, and the Prisoner Reentry Institute of John Jay College and serves as a member of the Strategic Resource Group advisory committee of the Department of Homeland Security's Virtual USA. He is also on the technical review team for the US Department of Justice's study "Advancing Knowledge and Practice in Policing: A Longitudinal Platform for National Research." He holds a Bachelor's Degree from California State University, San Bernardino and a Master's Degree from the University of Redlands. He is also a graduate of the FBI's National Academy and the California Command College. In 2007, he was named an Honorary Fellow of the Academy of Experimental Criminology and in 2009 he was the first inductee into CEBCP's Evidence-Based Policing Hall of Fame.

**SERGEANT JEFFREY EGGE** is supervisor of the Crime Analysis Unit and coordinator of the Minneapolis Police Department's (MPD) version of COMPSTAT and has been leading the transition towards a more evidence-based focus in the department. Through the use of research and experimentation with place-based future oriented analysis, the MPD is continuing the hot spots legacy of Sherman and Weisburd in Minneapolis. Jeff was a 2010 Fellow at the Police Executive Research Forum. He has a Master's Degree in Police Leadership and Education from the University of St. Thomas, and a Bachelor's Degree in Organizational Management from Concordia University. Jeff is a 15-year veteran of the MPD and was previously a Manager of Loss Prevention and Regional Investigations Specialist for Dayton-Hudson Corp. (later Target).

**DIRECTOR JOHN KAPINOS** has been the Strategic Planner for the Fairfax County (VA) Police Department since December 2005. He served for 25 years with the Montgomery County (MD) Police Department in a number of supervisory and management roles, including Director of the Policy and Planning Division. He served in a management support role on the task force that dealt with the D.C. Sniper incident. John holds a Bachelor's Degree in Criminal Justice from the University of Maryland, and is a Certified Public Manager. He served as President of the International Association of Law Enforcement Planners in 2006 and is now serving as President of Police Futurists International. He is a member of the Police Executive Research Forum, the Law Enforcement Planning and Research Directors Forum, and the International

Association of Chiefs of Police. John's current work involves strategic planning, agency performance measurement, and developing long-term plans around the future urbanization of Fairfax County.

**CHIEF DOUGLAS KEEN** has over 20 years of police service and has worked for the City of Manassas Police Department since 1989. He rose through the ranks, serving in every division of the department prior to being appointed as Chief of Police in May 2010. Chief Keen assisted in developing the department's first community policing unit in 1995 and spearheaded the department's replacement of its Records Management and Computer Aided Dispatch system. Under Chief Keen's the department achieved "Flagship" status from the Commission on Accreditation for Law Enforcement Agencies. Chief Keen received a B.S. degree from George Mason University and a Masters Degree in Public Administration from Oklahoma University. He serves as an Adjunct Professor in George Mason's Department of Criminology, Law and Society. He is also a graduate of the FBI National Academy.

**DR. CHRISTOPHER KOPER** is a newly appointed associate professor with the Department of Criminology, Law and Society at George Mason University, where he will also serve as a senior fellow and co-director of the evidence-based policing research program in Mason's Center for Evidence-Based Crime Policy. Dr. Koper holds a Ph.D. in criminology and criminal justice from the University of Maryland and has worked for several research organizations and universities, including the University of Pennsylvania, the Urban Institute, the RAND Corporation, and the Police Foundation. Most recently, he served as the director of research for the Police Executive Research Forum, a police membership and research organization based in the United States. His work has spanned issues in policing, firearms, federal crime policies, juvenile delinquency, research methods, and white collar crime.

**DR. CYNTHIA LUM** is the Deputy Director and Associate Professor of the Center for Evidence-Based Crime Policy in the Department of Criminology, Law and Society at George Mason University. She holds a Ph.D. in criminology and criminal justice from the University of Maryland, and served as a patrol officer and detective in the Baltimore City Police Department. She researches primarily in the area of policing. Her works in this area have included evaluations of policing interventions for crime prevention effectiveness, examining place-based determinates of street-level police decision-making, and understanding counterterrorism efforts by state and local law enforcement. She, Chris Koper and Cody Telep are the developers of the *Evidence-Based Policing Matrix*.

**DR. STEPHEN MASTROFSKI** is University Professor in the Department of Criminology, Law and Society and Director of the Center for Justice Leadership and Management at George Mason University. His research interests include police discretion, police organizations and their reform, and systematic field observation methods in criminology. Professor Mastrofski led a team of researchers and police supporting and evaluating the transformation of the Trinidad and Tobago Police Service. He is also engaged in research projects on measuring the quality of street-level policing, assessing the role of first-line police supervisors, and measuring police organization development and change. He has served on the editorial boards of seven journals, currently serving on the boards of two international policing journals. In 2000 he received the O.W. Wilson Award from the Academy of Criminal Justice Sciences for education, research, and service on policing. He served on the National Academy of Sciences panel on Police Services and Practices. In 2010 he was elected a Fellow of the American Society of Criminology.



**SERGEANT RENEE MITCHELL** is the Crime Analysis Sergeant for the Sacramento Police Department (SPD) where she has worked for the last 13 years. She has been a primary stakeholder creating innovative programs at SPD such as C.A.S.H. (Community Against Sexual Harm), the female fitness challenge, the community recruiter program and is currently developing a charter school modeled around the theme of police, fire and legislature to further the department's recruiting efforts. Renee holds a Bachelor of Science in Psychology, Masters of Arts in Counseling Psychology, a Masters of Business Administration and a Juris Doctorate from McGeorge School of Law. She was also awarded one of only two Fulbright Police Research Fellowships for 2009-2010 where she worked with the London Metropolitan Police Department and studied evidence-based policing at Cambridge University. Sergeant Mitchell has recently completed a department led randomized trial on hot spots policing.

**CHIEF CONSTABLE (RET.) PETER NEYROUD** has 30 years of experience in policing in the United Kingdom and most recently served as the Chief Executive of the National Policing Improvement Agency (NPIA) in the UK until his retirement in December 2010. He was previously Chief Constable of Thames Valley Police from 2002 and Vice-President of the Association of Chief Police Officers (ACPO) with responsibility for the NPIA and the reform of ACPO. In 2004 he was awarded the Queen's Police Medal for Services to Police and in 2011 he was named a Most Excellent Commander of the Order of the British Empire (CBE). He has an Honours Degree in Modern History from Oriel College, Oxford University, an MSc in Professional Studies (Crime and Policing) from Portsmouth University and diplomas in Applied Criminology (University of Cambridge) and Business Excellence. He is currently working on a Ph.D. at Cambridge University.

**CHIEF (RET.) DARREL STEPHENS** was appointed the Executive Director of the Major Cities Chiefs Association in October 2010. He also is a member of the faculty of the Public Safety Leadership Program at Johns Hopkins University. He is an accomplished police executive with over 40 years of experience. He also served for 2 years as the City Administrator in St. Petersburg, FL. He has 22 years experience as a police executive including almost nine years as Chief of Police of the Charlotte-Mecklenburg Police Department. He also served as the Executive Director of the Police Executive Research Forum (PERF) from 1986 until 1992. He received the prestigious PERF Leadership Award and the Academy of Criminal Justice Sciences' O.W. Wilson Award. He was elected a Fellow of the National Academy of Public Administration in 2005 and in 2006 he was awarded an Honorary Doctorate of Laws Degree from Central Missouri State University. In 2010, he was inducted into the Evidence Based Policing Hall of Fame and received the Distinguished Achievement Award in Evidence-Based Crime Policy.

**CODY TELEP, ABD** is a doctoral student in the Department of Criminology, Law and Society and a research assistant in the Center for Evidence-Based Crime Policy at George Mason University. From 2008-2011 he was a Presidential Scholar at George Mason. He received an MA from the Department of Criminology and Criminal Justice at the University of Maryland in 2008. His research interests include legitimacy, innovations in policing, police education, and evidence-based crime policy.

**SUPERINTENDANT HOWARD VEIGAS** has nearly 27 years of experience with the Derbyshire Constabulary. As a Superintendent, he has worked in a number of positions including Director of Intelligence and Senior Investigating Officer for homicide and serious crime, Head of Operations for a policing division and then director of the Business Change Programme, which identified a number of

departmental savings. He is currently Head of Community Safety. Superintendant Veigas completed the Police Executive Programme at Cambridge University, and wrote his thesis on "Assessing the Evidence-Base of Strategies and Tactics of Uniform Patrol in Derbyshire Police." He received a Masters Degree in Applied Criminology and Police Management in July 2011.

**DR. DAVID WEISBURD** is the Walter E. Meyer Professor of Law and Criminal Justice and Director of the Institute of Criminology of the Hebrew University Faculty of Law in Jerusalem, and a Distinguished Professor of Criminology, Law and Society at George Mason University and Director of its Center for Evidence-Based Crime Policy. Professor Weisburd is a member of a number of prestigious international committees including the Scientific Advisory Committee of the Office of Justice Programs, the Campbell Crime and Justice Group (as Co-Chair); and the Committee on Crime, Law and Justice of the National Academies of Science. He received the 2010 Stockholm Prize in Criminology for his research on policing and crime "hot spots." In 2011 he received the Klachky Family Award for the Advancement of the Frontiers of Science. He is author or editor of 18 books and more than 100 scientific articles.

**DR. JAMES WILLIS** is an Assistant Professor in the Department of Criminology, Law and Society at George Mason University. He earned his B.A. in Administration of Justice from The Pennsylvania State University and Ph.D. in Sociology from Yale University. Dr. Willis' research focuses on police organizational reform and decision making. He has published on Compstat, community policing, and punishment and has received research grants from the Office of Community-Oriented Policing Services, National Science Foundation, and National Endowment for the Humanities. In 2008 he and his coauthors, Stephen Mastrofski and David Weisburd, received the Law and Society Association's article prize for a paper they published on Compstat. He just completed a project examining the relationship between Compstat and community policing. His current research includes understanding the effects of technology on police organization and practice and examining the quality of work by patrol officers.

# The Evidence-Based Policing Hall of Fame

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Nominations can be made at <http://gemini.gmu.edu/cebcp/HallofFame.html>

## 2010 INDUCTEES

Deputy Chief Hassan Aden  
Alexandria (VA) Police Department

Chief James Bueermann  
Redlands (CA) Police Department (Retired)

Commissioner Edward Davis  
Boston (MA) Police Department

Chief Dan Flynn  
Marietta (GA) Police Department

Assistant Commissioner Peter Martin  
Queensland (Australia) Police Service

Chief Constable Peter Neyroud  
National Policing Improvement Agency (UK) (Retired)

Commissioner Charles Ramsey  
Philadelphia (PA) Police Department

Darrel Stephens  
Charlotte-Mecklenburg (NC) Police Department (Retired)

## 2011 INDUCTEES

Chief Frank Gajewski  
Jersey City (NJ) Police Department (Retired)

Sir Denis O'Connor  
Her Majesty's Chief Inspector of Constabulary (UK)

Deputy Commissioner Ian Stewart  
Queensland (Australia) Police Service

Hubert Williams  
President, Police Foundation and Newark (NJ) Police Department (Retired)

**THE EVIDENCE-BASED POLICING MATRIX**  
*<http://gemini.gmu.edu/cebcp/Matrix.html>*

*Cynthia Lum (George Mason University)*  
*Christopher Koper (Police Executive Research Forum)*  
*Cody Telep (George Mason University)*

**Center for Evidence-Based Crime Policy**  
**George Mason University**

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**Evidence-Based Policing**

**IDEAS IN AMERICAN POLICING**

**Evidence-Based Policing**

Abstract

The purpose of this research is to identify the most effective police practices and to provide a framework for the development of evidence-based policing. The research is based on a review of the literature on police practices and their effectiveness. The research is organized into three sections: (1) a review of the literature on police practices and their effectiveness; (2) a review of the literature on the development of evidence-based policing; and (3) a review of the literature on the implementation of evidence-based policing.

“Police practices should be based on scientific evidence about what works best.”

*Lawrence Sherman, 1998*

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**Questions**

1. What is the research evidence?
2. Which evidence should we believe?
3. How can I access the research easily?
4. How can I obtain generalizations from the research?

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"It worked"	"It didn't work"
<ul style="list-style-type: none"> <li><input type="checkbox"/> Hot spot policing at micro places for disorder</li> <li><input type="checkbox"/> Variety of POP efforts at hot spots of drugs and disorder</li> <li><input type="checkbox"/> Reactive arrests for DV (sometimes)</li> <li><input type="checkbox"/> Nuisance abatement</li> <li><input type="checkbox"/> Proactive arrests and crackdowns at open air drug markets</li> <li><input type="checkbox"/> Post arrest case enhancement</li> <li><input type="checkbox"/> Proactive arrests of repeat offenders</li> <li><input type="checkbox"/> POP in places (variety) and PSN project</li> <li><input type="checkbox"/> Zero tolerance and other proactive arrests</li> <li><input type="checkbox"/> Pulling levers and other gang suppression efforts using directed patrol, and order maintenance</li> <li><input type="checkbox"/> Targeted enforcement (DUIs, gun crimes)</li> <li><input type="checkbox"/> Community policing using problem solving</li> <li><input type="checkbox"/> Traffic stops to reduce crime, gun carrying</li> <li><input type="checkbox"/> Street closures</li> <li><input type="checkbox"/> Community oriented policing: neighborhood watch, door to door visits</li> <li><input type="checkbox"/> Probation-Police partnerships to reduce juvenile crime</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> DARE</li> <li><input type="checkbox"/> Neighborhood watch, monthly newsletters</li> <li><input type="checkbox"/> Trying to get landlords to restrict access</li> <li><input type="checkbox"/> Door to door contacts, home visits after abuse</li> <li><input type="checkbox"/> Second responder for family abuse</li> <li><input type="checkbox"/> Reactive arrests for DV</li> <li><input type="checkbox"/> Undirected saturation patrol or random patrol</li> <li><input type="checkbox"/> Police-probation partnership to increase supervision for juveniles</li> <li><input type="checkbox"/> Zero tolerance arrests</li> <li><input type="checkbox"/> Reactive arrests/investigations</li> </ul>

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**The Evidence-Based Policing Matrix**

Cynthia Lum (GMU), Christopher Koper (PERF), and Cody Telep (GMU)  
<http://gemini.gmu.edu/cebcp/matrix.html>

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## The Evidence-Based Policing Matrix

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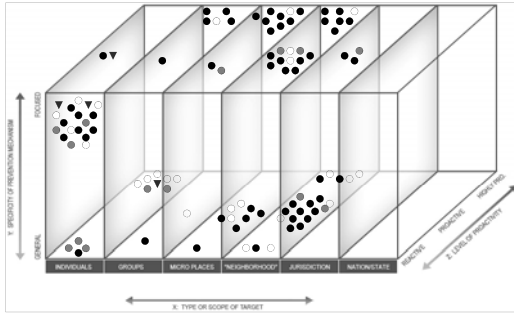
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N=103 (Dec 2010)



▼ Significant Backfire ○ Non-Significant Finding ● Mixed Results ■ Significant / Effective

THE EVIDENCE-BASED POLICING MATRIX

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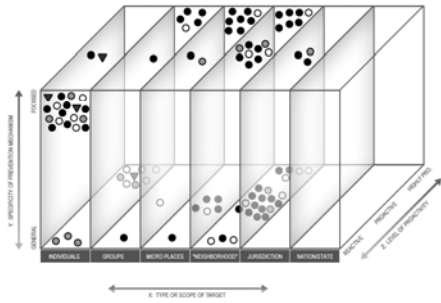
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### All studies in the Matrix



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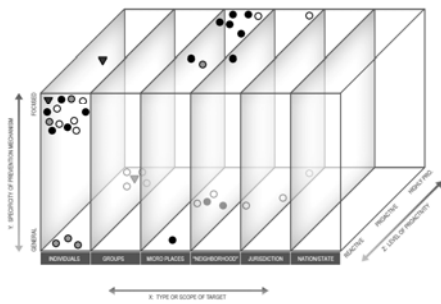
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### Most rigorous studies in the Matrix



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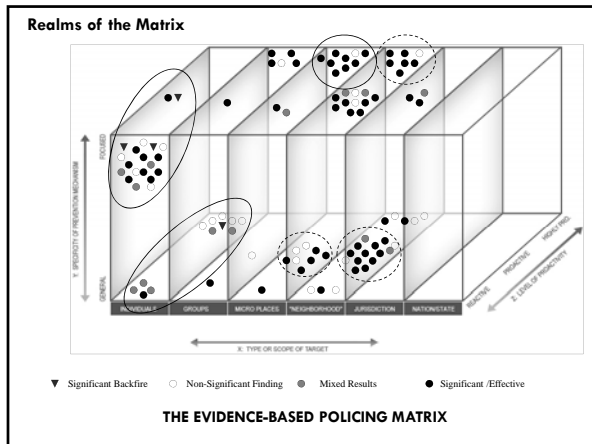
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**What does the Matrix tell us?**

- **79%** of successful interventions studied occur at “micro-places” or “neighborhoods”.
- **64%** of successful interventions are “focused”, or tailored strategies.
- **80%** of successful interventions are either “proactive” or “highly proactive”.
- **53%** of interventions that show “no effect” or a “backfire effect” focus on targeting individual(s).

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**Are police today “evidence-based”? YES**

- Rhetoric and diffusion of innovation (conferences, leaders).
- Ad hoc use of effective interventions and specialized units.
- Required by government solicitations.\*
- Increased importance of crime analysis and researchers.

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## Are police today “evidence-based”? **NO**

- Reactive, random beat patrol continues to dominate.
- Investigations: reactive, individual, case-by-case.
- Continued isolation from other agencies.
- Problem-solving/analytic process not regulated.
- Lack of professional development in this area.
- Some disdain/isolation of researchers and analysts.

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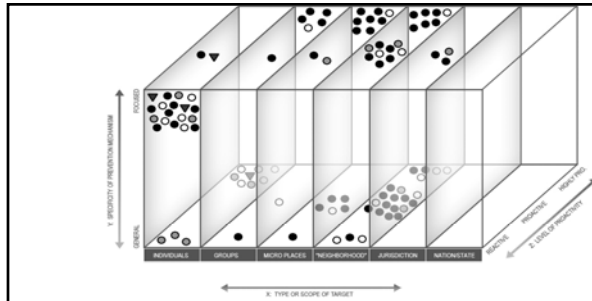
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### The Evidence-Based Policing Matrix

*How can police use the research evidence? How can they use the Matrix?*

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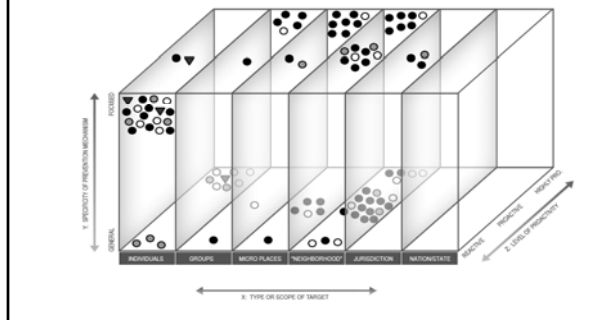
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## The Free Online Tool




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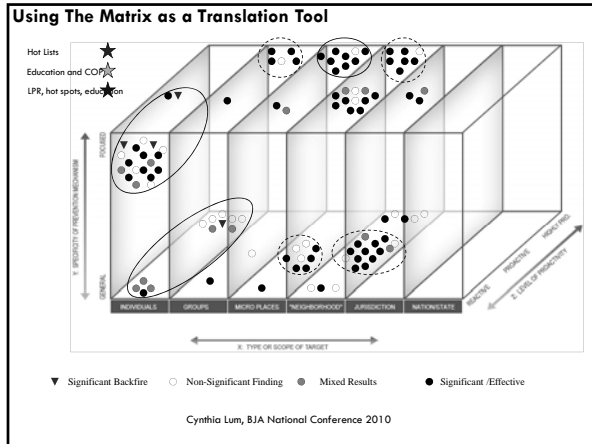
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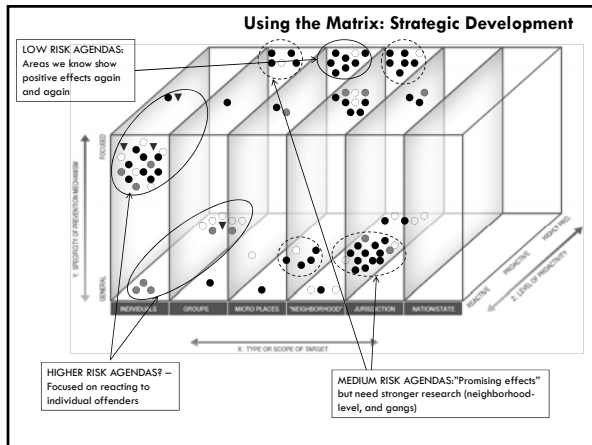
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- ### Building the capacity for these tactics and strategies (“easier, possible within the culture”)
- Find ways to incorporate these tactics into existing units
  - Stronger crime analysis and R and D units
  - Balance basic early training with prevention tactics
  - Reassess skill requirements for promotions
  - Build outcome measures into accountability systems
  - “Tighten” traditional accountability systems with innovative approaches
  - Partner with specialists who can help with technology, evaluations, research
  - Reward excellence (officers)

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**Building the capacity for these tactics and strategies (“harder, more innovative”)**

- Shift away from beat patrol
- Shift away from typological investigations
- Develop problem-solving investigative units w/civilian analysts (Develop cases on places)
- Filter technological adoptions through crime prevention evidence, not efficiency aspects
- Promotional assessments using “portfolio approach”
- Become “crime prevention specialists” and “criminologists”
- Change rewards system to reflect evidence-based policing

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**THE EVIDENCE-BASED POLICING MATRIX**

<http://gemini.gmu.edu/cebcp/Matrix.html>

*Cynthia Lum (George Mason University)*  
*Christopher Koper (Police Executive Research Forum)*  
*Cody Telep (George Mason University)*

**Center for Evidence-Based Crime Policy**  
**George Mason University**

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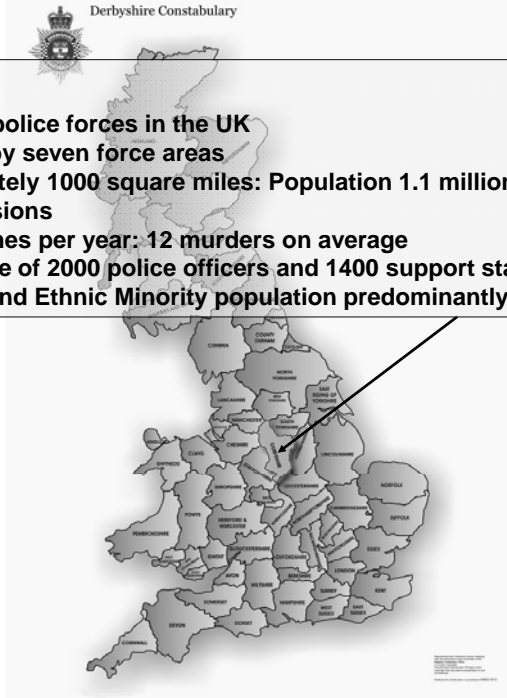
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# Assessing the Evidence-Base of Strategies and Tactics of Uniformed Patrol in Derbyshire Police

Superintendent Howard Veigas  
Head of Community Safety  
Derbyshire Constabulary

*CEBCP EVIDENCE-BASED POLICING LEADERSHIP WORKSHOP AND TRAINING*

Derbyshire Constabulary



**Statistics**

- **One of 43 police forces in the UK**
- **Bordered by seven force areas**
- **Approximately 1000 square miles: Population 1.1 million**
- **Three Divisions**
- **66,000 crimes per year: 12 murders on average**
- **A workforce of 2000 police officers and 1400 support staff**
- **7.9 Black and Ethnic Minority population predominantly in Derby City**

## Why Assess the Evidence-Base of Strategies?

- Evidence based practice in Derbyshire is not fully embedded
- Using strategies/tactics/interventions based on scientific evidence seems a logical way forward
- An opportunity to examine empirical research about which police practices worked best in 'crime reduction'
- Use the data to improve the effectiveness of our patrol functions in pre and post planning stage
- Resources diminishing - UK losing over 30,000 officers and staff by 2015 – cost saving is an opportunity to introduce evidence
- Cost effectiveness could be analysed – Through Activity Based Costings

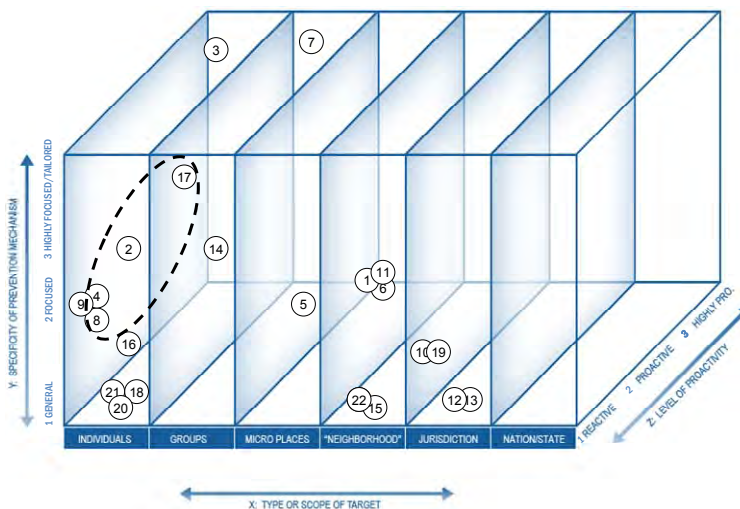
1. Door Knocks – *community engagement*
2. Think 25 – Alcohol Campaign – *Target under age sales*
3. 'Be – Safe' patrols with close partnership advice
4. Community oriented policing in response to increased dwelling burglaries
5. Targeted Street briefings in Derby
6. Safer Neighbourhood Team Newsletters
7. Multi Agency Gang Unit as part of Op Redshank Patrol strategy – *Hi vis patrol with partners*
8. Operation Vanquish – *An LPR operation*
9. Target Repeat Persistent Priority Offenders (PPO) – *including curfew checks*
10. Summer Robbery Hot spot patrols
11. Operation Vanquish – *Night time patrols on main arterial routes*
12. Road Policing deployment strategy
13. Christmas drink drive campaign – *2 week campaign only*
14. Reduced gang criminality and use of firearms – *Hi vis /disrupt /deter / LPR*
15. General Foot patrols
16. Truancy Patrols
17. Adopt a local school by Police Community Support Officer (PCSO)
18. Rapid response to emergency calls
19. Neighbourhood Patrols across the force for each SNT targeting hot spots of crime and ASB
20. Reactive Arrest Strategies
21. Reactive arrest for domestic violence case – *generated each day outstanding offenders*
22. Dwelling Burglary reactive mobile patrols - Operation Greyhound



### Coding for Each Patrol Function

	Title of Tactic	X - Axis Individual = I Groups = G Micro place = MP Neighbourhood – N Jurisdiction = J	Y- Axis 1 = General 2 = Focused 3 = Highly Focused/ tailored	Z - Axis 1 = Reactive 2 = Proactive 3 = Highly Proactive	Similar studies in the Matrix	Hypothesis about effectiveness 1 = does not work 2 = promising or in a realm with moderate rigour 3 = likely to be effective U = Unknown how effective	Frequency of patrol function in DP
1	Door Knocks	Neighbourhood	Focused - 2	Proactive- 2	Laycock, 1991	3	Monthly
2	'Think 25' Alcohol campaign	Individual	Focused - 2	Proactive - 2	None	U	Specific operations two/three times per year
3	'Be Safe' patrols with close partnership advice	Individual	Highly Focused/ Tailored - 3	Highly Focused/ Tailored - 3	None	3	Specific operations two/three times per year

### 22 Patrol Studies Mapped



## Frequencies for Characteristics of 22 Patrol Functions by Dimensions

Table 1 Frequencies for characteristics of 22 patrol functions by dimensions

<b>X- axis ( Target)</b>	n	%	<b>Y- axis (Specificity)</b>	n	%
Individuals	10	45.5	General (1)	10	45.5
Groups	2	9	Focused (2)	10	45.5
Micro Places	1	4.5	Highly Focused (3)	2	9
Neighbourhoods	7	32	Total	22	100
Jurisdictions	2	9			
Total	22	100			

<b>Z-axis (Proactivity)</b>	n	%	<b>"Hypothesized effectiveness"</b>	n	%
Mostly Reactive (1)	11	50	Doesn't work (1)	5	23
Proactive (2)	8	36	Promising (2)	5	23
Highly Proactive (3)	3	14	Likely to be effective (3)	4	18
Total	22	100	Unknown if effective (U)	8	36
			Total	22	100

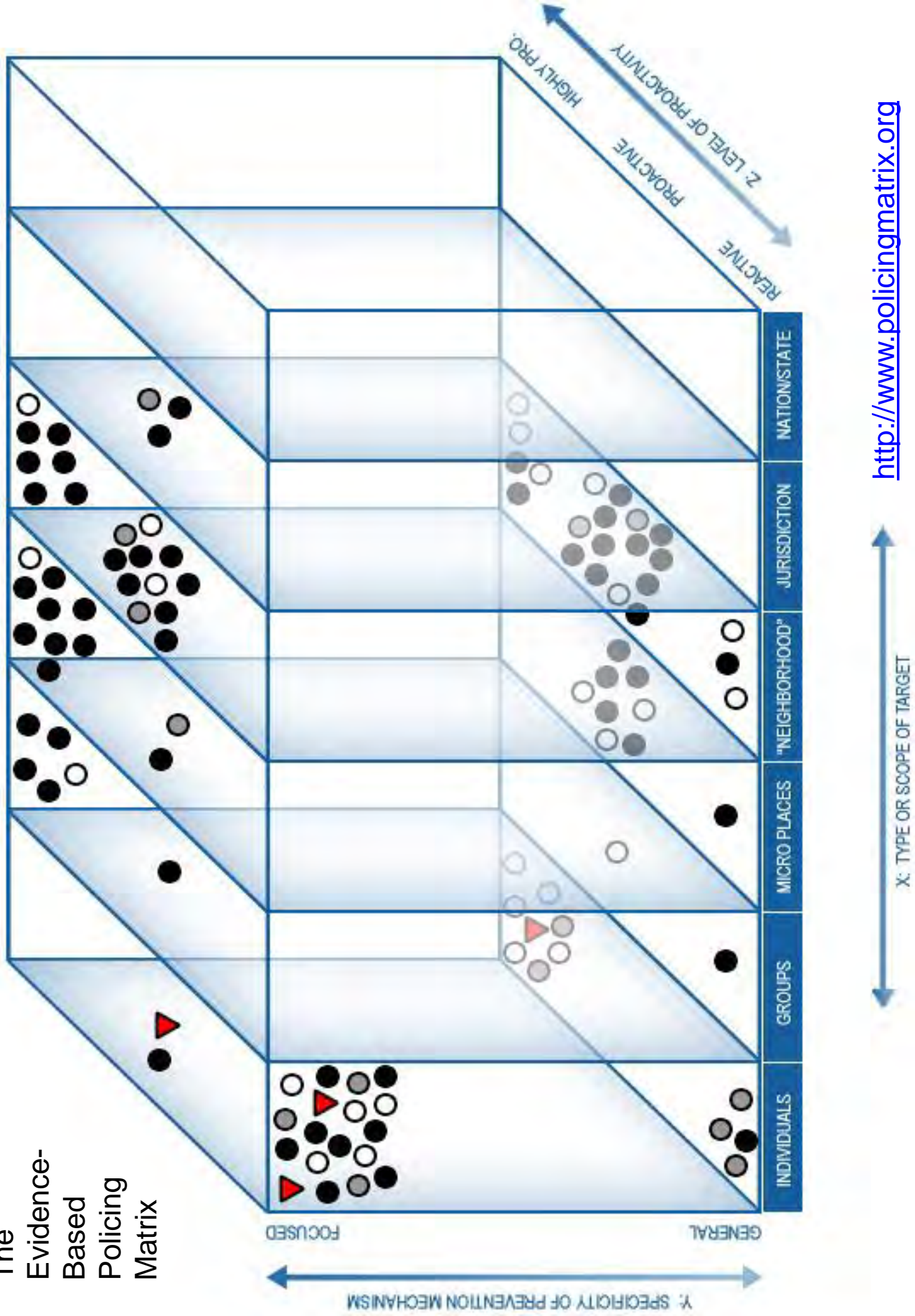
## Activity Analysis Study

	Number of officers taking part in AA	Daily Resilience	Daily Resilience %	Total AA hours recorded	Total Visible Patrol hours recorded	Total Visible Patrol hours recorded %	Total AA Immediate Response hours recorded	Total AA Immediate Response hours recorded %
Reactive	712	119	17	42566.00	6549.50	15	5678.50	13
SNT	392	62	16	24739.00	8045.75	33	783.75	3
RPU	60	20	33	5146.25	1096.25	21	941.75	18
<b>Total</b>	<b>1164</b>	<b>201</b>	<b>17</b>	<b>72451.25</b>	<b>15691.50</b>	<b>22</b>	<b>7404.00</b>	<b>10</b>

## Conclusions

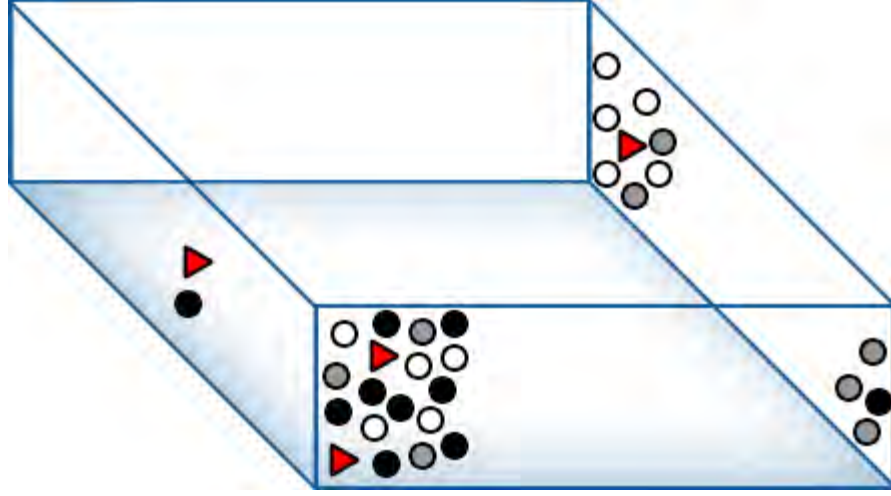
- First attempt to identify and quantify strengths of some of the patrol functions
- Use of the Matrix – focus on how organisation is structured with regard to its patrol portfolio – not known previously!
- Tendency of our agency to patrol – Individuals/General and Reactive
- A total of 9 ( 4 person based and 5 place based) were identified as promising or within an effective realm
- Identify gaps in knowledge and make recommendations about effective strategies that have proven ability to reduce crime
- Changes I would make:
  - Using the research evidence and results of study to increase strategic knowledge of staff about how use of EB policing can assist.
  - Provide operational managers with another tool, for strategies / tactics mechanism of preventions is 'crime reduction' – Use the Matrix
- Thank you for listening

# The Evidence-Based Policing Matrix



<http://www.policingmatrix.org>

## THE MATRIX > INDIVIDUALS



**Individuals** –Interventions which target distinct individuals or certain types of individuals such as violent youths, repeat offenders, sex offenders, or drunk drivers.

Author (Year)	Intervention	Result	Rigor	Y-Axis	Z-Axis
Abrahamse et al. (1991)	Post-arrest case enhancement of repeat offenders increased odds of arrestees being incarcerated.	●	VR	F	R
Berk et al. (1992)	Arrest of spousal abusers reduced recidivism	●	VR	F	R
Casey et al. (2007)	Domestic violence victims receiving home visits have significantly less calls for service than comparison group	●	M	F	R
Cho & Wilke (2010)	Arrest of intimate partner violence perpetrators associated with reduced victimization compared to non-arrest.	●	M	G	R
Dunford (1990)	Arrest warrant for domestic violence suspect reduced absent offender recidivism 50%	●	VR	F	R
Knoxville P.D. (2002)	Police-probation collaborative program participants more likely to successfully complete probation	●	M	F	R
Martin & Sherman (1986)	Targeted offenders in selective apprehension program more likely to be arrested, convicted, and incarcerated	●	R	F	R
Sherman & Berk (1984)	Arrest condition for domestic violence associated with significantly less offender recidivism compared to separation and mediation.	●	R	F	R

Spergel et al. (2002)	Comparison of 258 program juveniles with 96 comparison youth from showed the program youth had arrest levels 18 percent lower than the comparison youth over a 4-year period.	●	M	F	P
Worrall & Gaines (2006)	Police/probation officer partnership for juvenile offenders associated with citywide reductions in assault, burglary, and theft arrests	●	M	F	R
Esbensen (2002)	Students in Gang Resistance Education and Training (G.R.E.A.T.) program were less likely to join gangs in cross-sectional study. The longitudinal study, however, failed to find a programmatic effect.	●	M	G	HP
Friday et al. (2006)	Specialized domestic violence unit reduced the number of suspects who reoffended but did not reduce the number of repeat offenses by those who did reoffend compared to the suspects processed by regular patrol units.	●	M	F	R
Harmon (1993)	Those that receive D.A.R.E. significantly less likely to start using alcohol in year after program; no impact on cigarette or marijuana use	●	M	G	HP
McCold & Wachtel (1998)	Violent offenders in restorative justice program have lower recidivism rates, but this is a selection effect, not a treatment effect; no difference among property offenders	●	VR	G	R
Pate & Hamilton (1992)	Arrest for domestic violence had a deterrent effect for employed offenders, but increased recidivism among unemployed offenders	●	R	F	R
Sherman et al. (1992)	Arrest for domestic violence had deterrent effect for married, employed, white high school graduates, but was criminogenic for unemployed, unmarried, black high	●	R	F	R



school drop outs					
Sherman et al. (2000)	When compared to court, those receiving restorative justice conference have lower recidivism for violent crime, slightly higher recidivism for drunk driving, and no difference for juvenile shoplifting or property crime	●	VR	G	R
Sherman & Strang (2004)	Restorative justice conference fosters social solidarity compared to courts, leads to more apologies for victims and less desire for revenge; changes in repeat offending vary by crime type	●	VR	G	R
Becker et al. (1992)	Drug Abuse Resistance Education (DARE) had no significant impact on drug use	○	M	G	HP
Clayton et al. (1996)	No significant impact of D.A.R.E. on cigarette, alcohol, or marijuana use one year after and over five year follow up	○	R	G	HP
Davis & Taylor (1997)	Home visits after domestic violence failed to reduce repeat violence; Public education about domestic violence failed to reduce violence	○	VR	F	R
Davis et al. (2007)	No reduction in subsequent abuse for households that receive second responder within 24 hours or after 7 days	○	VR	F	R
Dunford (1992)	Arrest for domestic violence increased offense frequency at 12 months	○	VR	F	R
Ennett et al. (1994)	D.A.R.E. has no significant impact on smoking, alcohol use, or heavy drinking immediately after, 1 year after, and 2 years; after program	○	R	G	HP
Giblin (2002)	Juveniles participating in CAN (police/probation partnership) were more likely to have new technical violations than were juveniles on regular probation	○	VR	F	R

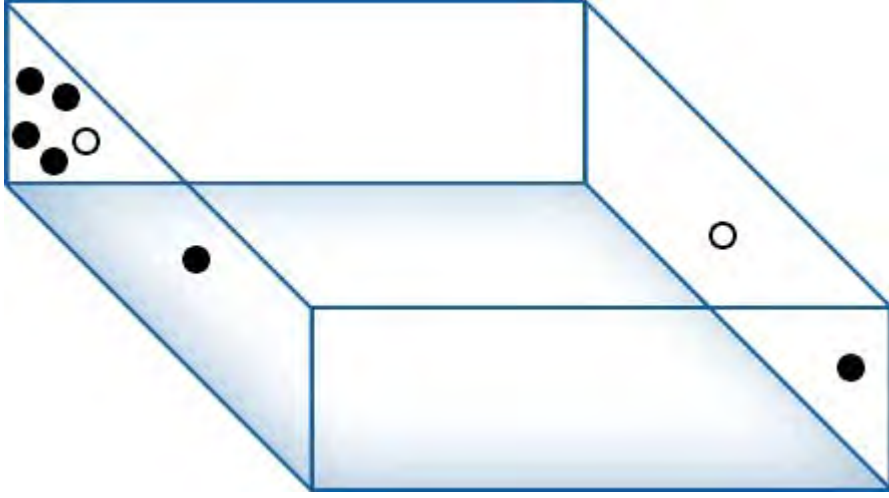
Hirschel et al. (1990)	Arrest for domestic violence increases official recidivism	○	VR	F	R
Ringwalt et al. (1991)	D.A.R.E has no significant impact on smoking, alcohol use, or use of inhalants	○	R	G	HP
Rosenbaum et al. (1994)	D.A.R.E has no significant overall impact on using cigarettes or alcohol	○	R	G	HP
Davis & Medina-Ariza (2001)	More elderly abuse incidents and calls to police reported in houses that receive home visit and education; those that receive home visits only call the police more, but don't report more abuse.	▼	VR	F	P
Hovell et al. (2006)	Those that receive Family Violence Response Team treatment have a 1.7 times greater rate of re-abuse	▼	M	F	R
Klein (1986)	More formal arrest processing increased recidivism	▼	VR	F	R
Sloboda et al. (2009)	Negative program effect for adolescent substance abuse prevention program on use of alcohol and cigarettes and no effect for marijuana use.	▼	VR	G	HP

Rigor: M = moderately rigorous; R = rigorous; VR = very rigorous

Y-axis: F = focused; G= general

Z-axis: R = reactive, P = proactive, HP = highly proactive

# THE MATRIX > GROUPS

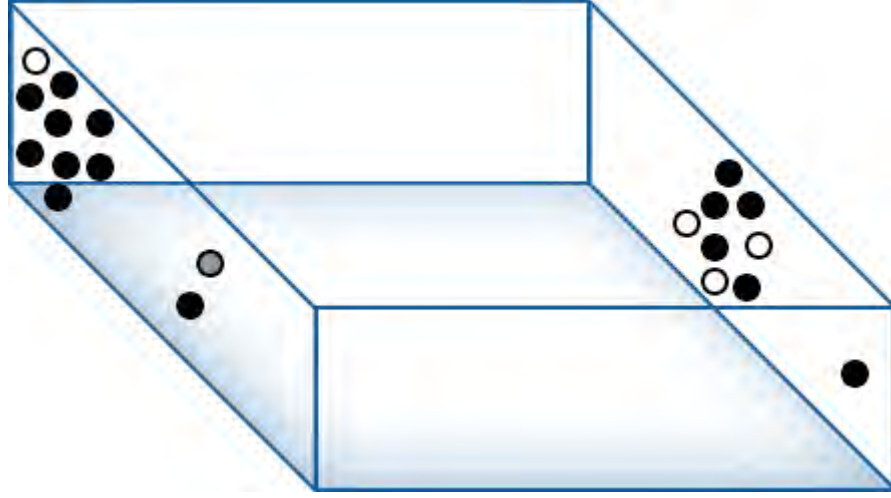


Groups – Interventions which target gangs or other co-offenders (individuals who offend in concert)

Author (Year)	Intervention	Result	Rigor	Y-Axis	X-Axis
Braga et al. (2001)	Operation Ceasefire was associated with significant reductions in youth homicide victimizations, shots-fired calls for service, and gun assault incidents.	●	M	F	HP
Braga (2008)	Pulling levers intervention associated with significant decline in monthly gun homicide	●	M	F	HP
Braga et al. (2008)	Pulling levers intervention associated with significant decline in monthly gun homicide and gun-related assault	●	M	F	HP
Bynum & Varano (2003)	Aggressive patrol and order maintenance anti-gang initiative associated with substantial reported crime decreases in two target precincts	●	M	G	R
Fritsch et al. (1999)(curfew)	Truancy and curfew enforcement associated with reduction in gang violence	●	M	F	P
McGarrell et al. (2006)	A "lever-pulling" strategy was associated with a 34.3% reduction in the monthly homicide rate.	●	M	F	HP
Decker & Curry(2003)	Curfew and gun enforcement anti-gang initiative leads to a very limited significant crime change in target neighborhoods	○	M	F	HP
Fritsch et al. (1999)(saturated patrol)	Undirected, saturated patrol has no impact on crime	○	M	G	P

Rigor: M = moderately rigorous; R = rigorous; VR = very rigorous  
 Y-axis: F = focused; G= general  
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## THE MATRIX > MICRO PLACES



**Micro-Places** – Interventions which target very small geographic locations such as a block, street segment, alley, intersection, specific address or cluster of addresses.

<b>Author</b>	<b>Intervention</b>	<b>Result</b>	<b>Rigor</b>	<b>Y-Axis</b>	<b>Z-Axis</b>
Baker & Wolfer (2003)	Problem-oriented policing project in a park reduces fear and perceptions of drug use and vandalism	●	M	F	HP
Braga et al. (1999)	Problem-oriented policing in violent crime hot spots leads to reductions in violent and property crime, disorder and drug selling	●	VR	F	HP
Braga & Bond (2008)	Focus on hot spots of crime leads to reductions in crime and disorder calls for service	●	VR	F	P
Chaiken et al. (1975)	Increased police on the New York Subways at night led to reduced crime	●	M	G	P
Di Tella & Schargrodsy (2004)	Blocks that received extra police protection experienced significantly fewer car thefts than the rest of the neighborhoods.	●	R	G	R
Eck & Wartell (1998)	Property managers who have a meeting with police and threat of nuisance abatement report less crime, receiving letter somewhat effective in reducing crime	●	VR	F	HP
Hope (1994)	Case studies of problem-oriented policing and drug-market locations. Forced closure or sale of property reduced drug dealing	●	M	F	HP
Jim et al. (2006)	Community-oriented policing in a retail shopping center led to reduced perception of gang activity and fear of crime	●	M	G	P

Lawton et al. (2005)	Police officers on drug corners in Philadelphia led associated with significant localized intervention impacts for both violent and drug crimes.	●	M	G	P
Mazerolle, Price et al. (2000)	The use of civil remedies and third party policing associated with reduced drug crime, especially in residential locations	●	VR	F	HP
Mazerolle, Ready et al. (2000)	Problem-oriented policing in public housing associated with reductions in property and violent crime.	●	M	F	HP
Ratcliffe et al. (2010)	Foot patrol associated with a significant decrease in crime in hot spots that reach a threshold level of pre-intervention violence	●	VR	G	P
Sherman & Weisburd (1995)	Substantial increases in police patrol associated with reduction in total crime calls and more significant reduction in disorder at high crime hot spots	●	VR	G	P
Taylor et al. (2010)- POP	Problem-oriented policing in hot spots associated with a 33% drop in “street violence” during the 90 days after the intervention	●	VR	F	HP
Weisburd & Green (1995)	Crackdowns on drug hot spots reduced disorder; no effects on violence or property crime	●	VR	F	HP
Sherman & Rogan (1995)	Crack house raids reduced crime for about 12 days; crime reductions decayed quickly	●	VR	F	P
Buerger (1994)	Problem-oriented policing in high crime addresses leads difference in calls for service in commercial treatment vs. control addresses, but small decline in residential calls in treatment area	○	VR	F	HP

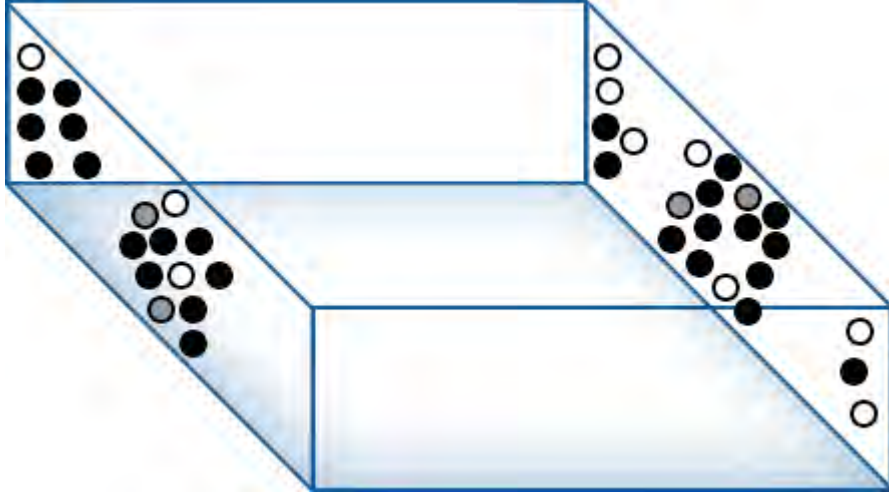
Lum et al. (2010)  Use of license plate readers mounted on patrol cars in autotheft hot spot areas not associated with declines in auto crime or crime generally in two jurisdictions  VR  G  P

Taylor et al. (2010)- Saturation  Saturation/directed patrol in hot spots not associated with a significant decline in crime in the post-intervention period  VR  G  P

Weiss & Freels (1996)  Aggressive traffic law enforcement had no impact on robbery or auto theft rates.  M  G  P

Rigor: M = moderately rigorous; R = rigorous; VR = very rigorous  
Y-axis: F = focused; G= general  
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## THE MATRIX > COMMUNITIES & NEIGHBORHOODS



**Communities and Neighborhoods** –Interventions which target larger geographic units such as census tracts, police beats or sectors, "communities", or "neighborhoods".

Author	Intervention	Result	Rigor	Y- Axis	Z- Axis
Berk & MacDonald (2010)	Broken windows approach to deal with homeless encampments associated with meaningful reduction in violent, property, and nuisance crimes	●	M	F	P
Boydston (1975)	More field interrogations associated with fewer outdoor crimes	●	M	G	P
Caeti (1999)	Beats in which police used hot spots and zero tolerance had greater crime reductions than those in which police used POP and increased visibility	●	M	G	P
Clapp et al. (2005)	DUI prevention program and increased law enforcement led to decrease in self-reported DUI at the target university, whereas rates at the comparison campus remained stable.	●	M	G	P
Cohen & Ludwig (2003)	Targeted patrol against gun crime reduced shots fired by up to 34% and gun-related assault injuries by up to 71% on days the program was in action	●	M	G	P
Connell et al. (2008)	Officer-initiated community policing program associated with a significant reduction in violent and property crimes in the targeted area, but not in comparable areas in the county	●	M	G	P
Giacomazzi (1995)	Community crime prevention program leads to overall decrease in crime and increase in resident quality of life	●	M	F	HP
Josi et al. (2000)	Larceny and burglary drop in beats with increased traffic stops compared to routine patrol	●	M	F	P

Koper et al. (2010)	Multi-agency partnership focused on enforcement, prosecution, and community improvement associated with reduction in crime and violence	●	R	F	P
Krimmel & Mele (1998)	Targeting stolen vehicle dump sites leads to reduced auto theft	●	M	F	P
Lasley (1996)	Street closures associated with drop in violent crime drops, but not property crime using two year time-series	●	M	F	HP
Laycock (1991)	Burglary declines 62 percent after door-to-door visits to gain community intelligence and increase property marking	●	M	F	HP
Lindsay & McGillis (1986)	Burglary reduced for 18 months after initiation of community policing and neighborhood watch program	●	M	F	HP
Mazerolle et al. (2003)	Beat policing associated with a reduction in overall neighborhood crime rates and a reduction in calls for police service over a long period.	●	M	G	P
Papachristos et al. (2007)	Group of Project Safe Neighborhoods initiatives associated with greater declines in homicide in the treatment neighborhoods compared to control neighborhoods	●	M	F	HP
Pate & Skogan (1985b)	Program to increase the quantity and quality of police-citizen contacts and to reduce disorder was successful in improving evaluations of police service and in reducing perceived levels of social disorder	●	M	G	P
Press (1971)	Police manpower increased by 40 percent in one precinct and outdoor crimes decreased compared to control precinct	●	M	G	R
Reiss (1985)	More arrests for "soft crimes" associated with a decline in crimes against persons and property in the	●	M	G	P



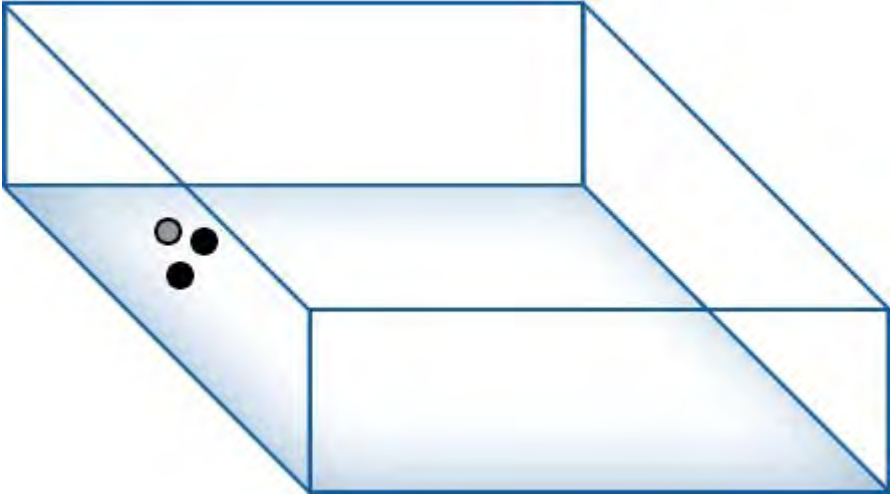
central business district

Sherman et al. (1995)	Directed patrol to increase gun detection leads to significant increase in gun seizures and decline in gun-related crime.	●	M	F	P
Skogan et al. (1995)	After 18 monthly police-community meetings, reductions in some crimes and victimization using some measures but not others	●	M	F	HP
Smith (2001)	92 percent reduction in crime in the target area during a crackdown. Crime reduction persisted in some parts of the neighborhood 6 months later	●	M	G	P
Tita et al. (2003)	Violence declined during and after the pulling levers intervention	●	M	F	P
Trojanowicz (1986)	Foot patrol areas had fewer crimes than control areas	●	M	G	P
Tuffin et al. (2006)	POP program resulted in positive changes in crime, perceptions of antisocial behavior, and feelings of safety after dark.	●	M	G	HP
Weiss & McGarrell (1996)	Focus on vehicle stops led to decrease in reported burglaries and auto vehicle thefts.	●	M	G	P
Wycoff et al. (1985)	Door-to-door police visits associated with reduced victimization	●	M	G	HP
McCabe (2009)	One of two narcotics enforcement initiatives was successful in reducing crime	●	M	F	P
McGarrell et al. (2001)	Directed patrol to focus on suspicious activities and locations, reduced violent gun crime. In contrast, a general deterrence strategy, focused on maximizing vehicle stops, did not have an effect.	●	M	G	P
Nunn et al. (2006)	Covert drug trafficking interdiction associated with an overall crime decline in target area. but an	●	M	F	P

	increase in drug-related calls for service				
Pate & Skogan (1985a)	Proactive disorder arrests associated with significant reductions in total Part I crimes, personal crimes, and burglary.	●	M	G	P
Bennett (1990)	Lower socioeconomic status areas that tended to be higher in crime had less surveillance and less effective neighborhood watch programs	○	M	G	HP
Kelling et al. (1974)	No difference in crime by beat based on the number of police cars assigned to random patrol.	○	M	G	R
Novak et al. (1999)	No decline in burglary or robbery following proactive disorder enforcement	○	M	F	P
Pate et al. (1985)(Houston)	Monthly newsletter with crime data failed to reduce victimizations of recipients	○	VR	G	P
Pate et al. (1985) (Newark)	Monthly newsletter with crime data failed to reduce victimizations of recipients	○	VR	G	P
Pate et al. (1987)	Community block watch has no impact on crime	○	R	G	HP
Police Foundation (1981)	No difference in crime by number of foot patrol officers assigned	○	M	G	R
Sviridoff et al. (1992)	Crackdown on crack market, but no change in violent crime rate	○	M	F	P
Wycoff & Skogan (1993)	No decrease in victimization after increase in police-community meetings in target district	○	M	G	HP
Weisburd et al. (2008)	Risk-focused policing program targeting juvenile risk factors has no influence on self-reported delinquency	○	VR	F	HP

Rigor: M = moderately rigorous; R = rigorous; VR = very rigorous  
 Y-axis: F = focused; G= general; Z-axis: R = reactive, P = proactive, HP = highly proactive

THE MATRIX > JURISDICTION



Political Jurisdictions – interventions which target politically distinct, but local jurisdictions. These are jurisdictions within larger geo-political jurisdictions and include cities, counties, parishes, or townships.

Author	Intervention	Result	Rigor	Y-Axis	Z-Axis
Malm & Tita (2006)	Green Teams (increased marijuana enforcement) decrease grow operations in target areas without significant displacement to surrounding areas	●	R	F	P
Villaveces et al. (2000)	Homicide rates significantly lower on days gun ban/police intervention in effect compared to non-intervention days in 2 Columbian cities	●	R	F	P
Fell et al. (2005)	Increased DUI enforcement lead to declines in drinking-and-driving fatal crashes in two states but not two others	●	R	F	P

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## The Evidence-Based Policing Matrix

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**Abstract** The next phase of evidence-based policing requires both scholars and practitioners to move from lists of specific studies about “what works” to using that information strategically. This requires developing generalizations or principles on the nature of effective police strategies and translating the field of police evaluation research into digestible forms that can be used to alter police tactics, strategies, accountability systems, and training. In this article, we present a tool intended for such use: the Evidence-Based Policing Matrix. The Matrix is a consistently updated, research-to-practice translation tool that categorizes and visually bins all experimental and quasi-experimental research on police and crime reduction into intersections between three common dimensions of crime prevention—the nature of the target, the extent to which the strategy is proactive or reactive, and the specificity or generality of the strategy. Our mapping and visualization of 97 police evaluation studies conducted through December 31, 2009, indicate that proactive, place-based, and specific policing approaches appear much more promising in reducing crime than individual-based, reactive, and general ones. We conclude by discussing how the Matrix can be used to guide future research and facilitate the adoption of evidence-based policing.

**Keywords** Evidence-based policing · Effectiveness · Matrix · Evaluation · Experiments · Hot spots policing

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## Introduction

Following the work of the President's Commission on Law Enforcement and the Administration of Justice (1967), researchers have produced a large body of scholarship on a wide range of policing topics. This body of literature, recently reviewed by a special committee of the National Research Council (NRC) (2004), has covered numerous issues, including police organization, management, strategies, personnel, discretion, accountability, and patrol practices, to mention only a few. In recent years, there has been a growing interest in synthesizing lessons from this body of research, particularly with respect to police effectiveness in controlling crime. Prominent reviews of research on this topic have produced conclusions about the effectiveness of several specific policing interventions (e.g., hot spots policing) as well as some broad overviews about the utility of general approaches (e.g., community-oriented policing, crackdowns, and problem solving).

To date, however, there have been few attempts to develop generalizations or principles about the nature of effective police strategies or to quantify differences in the effectiveness of broad categories of police strategies. For example, are place-based strategies more or less effective than offender-based strategies? Are there additional distinctions that we can make regarding the relative success of strategies targeting particular types of places and people? At the same time, what characteristics are common to successful strategies such as hot spots policing and "pulling levers" against gang violence? Further, to what degree are strategies more effective when they are proactive and focused—two qualities that are generally thought to enhance the efficacy of police interventions? How do these strategic dimensions interact to influence police effectiveness? Finally, how might these insights guide the development and/or selection of police strategies across different problems and contexts? Police scholars have not often made such generalizations, which may be one reason that police research has arguably had relatively little impact on the practice of policing (Bayley 1998; Lum 2009).

In this paper, we attempt to extend and refine generalizations about effective police crime prevention strategies in three ways. First, we compile and analyze the most comprehensive collection to date of methodologically rigorous evaluation studies in policing. In total, this collection includes 97 experimental and quasi-experimental evaluations conducted through the end of 2009.<sup>1</sup> Second, we create a unique classification system for each study based on three very common dimensions of crime prevention strategies: the nature and type of target, the degree to which the strategy is reactive or proactive, and the strategy's level of focus. We then "map" these 97 studies into a three-dimensional matrix—which we refer to as the "Evidence-Based Policing Matrix" (from here on, "the Matrix")—that illustrates the distribution of evaluations and effective practices along these three dimensions. Third, we conduct quantitative comparisons of outcomes across groups of studies classified along our strategic dimensions.

This categorization and visualization of evaluation studies, coupled with our quantitative analyses of outcomes, reveals a number of insights into the commonalities of effective police strategies that are not revealed as conspicuously

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<sup>1</sup> Our online tool allows us to update this collection every year.

from other reviews. In sum, we find that police strategies are more effective when they are place-based, proactive, and focused. Quantitatively, the most notable contrast is that between offender-based and place-based approaches; while a range of general, focused, and proactive strategies have been effective when targeted on places, results have been much more mixed for evaluations of offender-based strategies irrespective of the extent to which they are focused or proactive. Conclusions about the effectiveness of place-based, proactive strategies—and particularly the relative effectiveness of targeting different types of places (like neighborhoods and smaller “micro places”)—must be tempered to some degree based on the strength of the research designs used in place-based studies. However, this finding is compelling given that many police strategies tend to gravitate toward offender-based, reactive approaches.

We conclude by discussing how our Matrix might be used to guide the formulation and selection of strategies in policing as well as the development of an agenda for future policing research (our discussion complements Lum’s (2009) *Ideas in American Policing* lecture on how the Matrix can be used by practitioners for purposes of assessment, training, deployment, and management). We also consider how the Matrix can be used as a practice-oriented research translation tool that may better facilitate the adoption of evidence-based policing and evidence-based funding.

### **Synthesizing research evidence for use in practice**

In 1998, Lawrence Sherman advocated for “evidence-based policing,” arguing that “police practices should be based on scientific evidence about what works best” (Sherman 1998: 2). Like other police researchers and innovative police chiefs at the time, Sherman believed that information from systematic or scientific research, as well as rigorous crime analysis, should be regularly used and generated by the police to make both strategic and tactical decisions. At the core of this belief are a number of tenets: that science can be embedded into practice; that evaluations must be believable, valid, and useful to policing; and that there is some mechanism by which such evaluation findings can be translated into everyday decision making.

As interest in evidence-based crime policy has grown, police scholars have made a number of efforts to facilitate its adoption through syntheses of research on police and crime reduction, with an emphasis on research of higher methodological quality. The most recent and influential of these efforts have come from three sources.<sup>2</sup> The first was the 1997 University of Maryland report to Congress, conducted by Sherman and his colleagues on “What Works, What Doesn’t, and What’s Promising” in crime prevention (a project to which the first author of this article contributed). This was later updated in a 2002 volume, *Evidence-Based Crime Prevention* (Sherman et al. 2002). Sherman and his colleagues reviewed over 600 studies on a wide range of crime prevention programs and graded each study according to a

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<sup>2</sup> Earlier reviews of police research included Clarke and Hough’s (1980) compilation of papers on police effectiveness, a series of reviews by Sherman (1983, 1986, 1990, 1992), and a special issue of *Crime and Justice: A Review of Research* (Tonry and Morris 1992).



“Scientific Methods Scale” (Farrington et al. 2002: 18). They judged programs as working if they were supported by at least two studies of high methodological quality (i.e., experiments and rigorous quasi-experiments) and the preponderance of all remaining studies. They judged programs as promising if they were supported by at least one rigorous study and the preponderance of less rigorous studies. Programs were categorized as not working if there were at least two methodologically rigorous studies showing ineffectiveness and a preponderance of evidence showing ineffectiveness in other studies. Sherman et al.’s contention was that more scientifically rigorous studies should be given more weight in guiding practice; consequently, these studies were emphasized in recommendations about “what works” in policing and other criminal justice arenas.

The second set of efforts has been promoted by the Campbell Collaboration, specifically its Crime and Justice Coordinating Group, which sponsors systematic reviews of research across multiple areas of criminal justice (see Farrington and Petrosino 2001). The collaboration was established in 2000, mirroring efforts of the Cochrane Collaboration, which examines evaluations in the medical arena. Campbell reviews, which have included both narrative reviews and meta-analyses, focus on high-quality experimental and quasi-experimental studies. Like Cochrane reviews, Campbell reviews also center on specific interventions within a field. For example, systematic reviews of law enforcement strategies have examined hot spots policing (Braga 2007), problem-oriented policing (Weisburd et al. 2008b), neighborhood watch (Bennett et al. 2008), suppression of gun carrying (Koper and Mayo-Wilson 2006), counter-terrorism measures (Lum et al. 2006), drug enforcement (Mazerolle et al. 2007), and second responder programs for family abuse (Davis et al. 2008).

The third was a recent report by the National Research Council (NRC) on *Fairness and Effectiveness in Policing* (NRC 2004). For this report, the NRC’s Committee to Review Research on Police Policy and Practices, chaired by Wesley Skogan and Kathleen Frydl, brought together a number of senior police scholars<sup>3</sup> to assess the state of police research in a range of areas covering crime prevention effectiveness as well as organizational and cultural dimensions of policing. In terms of assessing research on the “effectiveness of police activities in reducing crime, disorder and fear” (Chapter 6 of the report, which later became Weisburd and Eck 2004), the committee issued strong conclusions about specific policing strategies (e.g., hot spots policing) and also provided, as discussed shortly, a conceptual framework highlighting some dimensions of police strategies that are associated with effectiveness.

In total, these efforts have produced a number of recommendations and conclusions about police crime prevention strategies. Four key points noted by the NRC (2004: 246–247; see also Weisburd and Eck 2004), which have also been echoed in other key reviews, are that: (1) the standard model of policing that emphasizes random patrol, rapid response to calls for service, follow-up investigations by detectives, and unfocused enforcement efforts has not been effective in

<sup>3</sup> The committee included Wesley Skogan, David H. Bayley, Lawrence Bobo, Ruth Davis, John Eck, David A. Klinger, Janet Lauritsen, Tracey Maclin, Stephen D. Mastrofski, Tracey L. Meares, Mark H. Moore, Ruth Peterson, Elaine B. Sharp, Lawrence Sherman, Samuel Walker, David Weisburd, and Robert Worden.

reducing crime (see also Sherman 1997; Sherman and Eck 2002); (2) some of the strategies falling under the umbrella of community policing have been effective in reducing crime, disorder, or fear of crime, while others have not (see also Bennett et al. 2008; Sherman 1997; Sherman and Eck 2002); (3) police strategies that are more focused and tailored to specific types of crimes, criminals, and places are more effective (see also Braga 2007; Koper and Mayo-Wilson 2006; Mazerolle et al. 2007; Weisburd et al. 2008a, b); and (4) problem-oriented policing, a strategy involving systematic analysis of crime and disorder problems and the development of tailored solutions (Goldstein 1979), is effective (see also Weisburd et al. 2008a, b, 2010). Among focused policing strategies, hot spots policing—i.e., patrol, problem-solving, and/or other interventions focused on small areas or specific places of crime concentration—has proven particularly effective in several rigorous outcome interventions (Braga 2007). In the judgment of NRC, the research on hot spots policing constitutes the “...strongest collective evidence of police effectiveness that is now available” (NRC 2004: 250). Strategies judged as ineffective include, among others, arrests of juveniles for minor offenses, community policing without a clear focus on risk factors, and arresting unemployed suspects in misdemeanor domestic violence cases (NRC 2004; Sherman 1997).

Notwithstanding these advancements, there are still gaps in both our knowledge about police crime prevention efforts and how such knowledge can or should inform the implementation of effective strategies. Many police crime prevention strategies have yet to be evaluated rigorously. Ambiguities also remain in the existing evidence, in particular, the question of *why* some types of strategies tend to work better. With respect to hot spots policing, for example, it is not clear what types of strategies—directed patrol, situational crime prevention, nuisance abatement, or other forms of problem solving—work best for policing hot spots generally or for policing particular types of hot spots. And while hot spots policing appears effective in its own right, is it more effective than strategies focused on individual offenders, problematic groups, or larger places like neighborhoods? If so, can we quantify those differences? In other words, how does the likelihood of a successful outcome compare across these types of interventions? And most important to practitioners, how can we move beyond lists of effective and ineffective strategies evaluated in isolation in order to draw generalizations about effective policing approaches and apply those generalizations across different jurisdictions, settings, policing units, and crime types?

As these questions suggest, deriving more strategic principles from existing police research may help to better translate the research reflected in these past reviews. Weisburd and Eck's (2004) recent work for the NRC reflects the start of such an effort. Building on Sherman and Eck's review (2002), Weisburd and Eck developed a two-dimensional typology of police practices. One dimension, the *diversity of approaches*, represents the content of the practices employed. Strategies that rely primarily on traditional law enforcement are low on this dimension, while strategies involving multi-faceted, multi-agency enforcement and prevention efforts, for example, rank more highly. The other dimension, *level of focus*, represents the extent to which police focus or target their efforts. Strategies that are more general and applied uniformly across places or offenders would be ranked low on this dimension (Weisburd and Eck 2004: 45). Weisburd and Eck argue that strategies with a high level of focus (e.g., hot spots and problem-oriented policing) are



particularly effective, while those that are less focused (e.g., reactive patrol, community policing) are not promising for reducing crime and disorder.

Weisburd and Eck's synthesis reflects an important step towards identifying strategic commonalities of evaluated interventions. However, we need more specific and wider-ranging generalizations from the literature that coincide with the organizational structure and vernacular of policing if the utility of the evidence is to be made more obvious. Indeed, although existing research syntheses have facilitated the adoption of evidence-based policing to some extent by focusing on specific tactics and strategies, research has generally had no more than a modest impact on police practices (Bayley 1998). Furthermore, U.S. police agencies and their international counterparts are well known for *not* using evidence-based practices in everyday patrol and investigations. The best example of this is the general failure of police agencies to feature place-based strategies—i.e., hot spots policing, despite the strong evidence of its efficacy and the spatial distribution of crime (NRC 2004; Weisburd 2008; Weisburd et al. 2004).<sup>4</sup> Police also continue to make widespread use of other strategies that researchers consider ineffective, such as the DARE program (Drug Abuse Resistance Education), reactive arrests, rapid response to 911 calls, and gun buybacks.

Many of the causes for this are organizational, related to the stubborn and slow-changing nature of police culture, tradition, and practices (Bayley 1994; Mastrofski 1999; O'Neill et al. 2007; Sherman 1984, 1998). Yet as Lum (2009) asserts, the next step in moving toward evidence-based policing is to build on existing evidence, systematic reviews, and research infrastructures to create translation tools for conveying that evidence to police practitioners. Translation tools highlighting general principles of police effectiveness that can be applied across a range of conditions and problems may be more useful to practitioners than lists of specific strategies that are effective or ineffective. For researchers, such translation tools may also illuminate useful generalizations about why particular prevention efforts are valuable and what areas of research are needed. Toward this end, we created the Evidence-Based Policing Matrix, an online translation tool, from which we attempt to derive more general principles about the types of police interventions that work through a unique categorization and “binning” of all available experimental and quasi-experimental police evaluation research studies. Such categorization allows us to glean new insights from the breadth of experimental and quasi-experimental literature about why certain strategies may work better than others, and what areas of policing present high demand for more information.

### **The Evidence-Based Policing Matrix**

The Matrix originally emerged from work by Lum and Koper ([forthcoming](#)<sup>5</sup>), who initially conceptualized it to discuss how crime prevention might be applied to

<sup>4</sup> Although many agencies claim to be doing hot spots policing (Police Executive Research Forum 2008; Weisburd and Lum 2005), much of what they term hot spots policing appears to be consistent with more traditional beat- and neighborhood-based strategies (Koper 2008).

<sup>5</sup> This book chapter was accepted for publication in 2008 by the editors, but the main volume has been delayed.

counterterrorism. Inspired by Rosenberg and Knox's (2005) three-dimensional grid for conceptualizing childhood well-being and youth violence prevention, they created a Crime Prevention Matrix to map evaluated criminal justice interventions according to their common strategic and tactical characteristics. They reasoned that mapping these interventions into the Matrix according to shared dimensions might reveal clusters of positive evaluations in intersecting dimensions. In turn, these clusters might illustrate general characteristics of effective programs that might not be apparent from systematic reviews or meta-analyses of particular interventions or from narrative reviews of wide-ranging criminal justice interventions. Such three-dimensional mapping, in turn, could be useful in developing and selecting interventions (in the case of that discussion, counterterrorism interventions) that might prove more fruitful in terms of preventative results.

With this conceptualization as a base, we then used police evaluation research to further refine the Matrix, which we display in Fig. 1. We also invite readers to visit our online interactive version of the Matrix.<sup>6</sup> The Matrix is defined by three dimensions that can be applied to all evaluation research: the target of the intervention (X-axis), the level of focus or specificity of the prevention mechanisms (Y-axis), and a reactive to highly proactive continuum (Z-axis) indicating the level of proactivity of the intervention. We label this figure the "Crime Prevention Matrix" to indicate that it can be used for all types of interventions; one could imagine, in addition to an Evidence-Based Policing Matrix, that it could also be used as a corrections and treatment Matrix, a juvenile justice Matrix, or even Matrices for court practices and sentencing, perhaps with different dimensional categories.

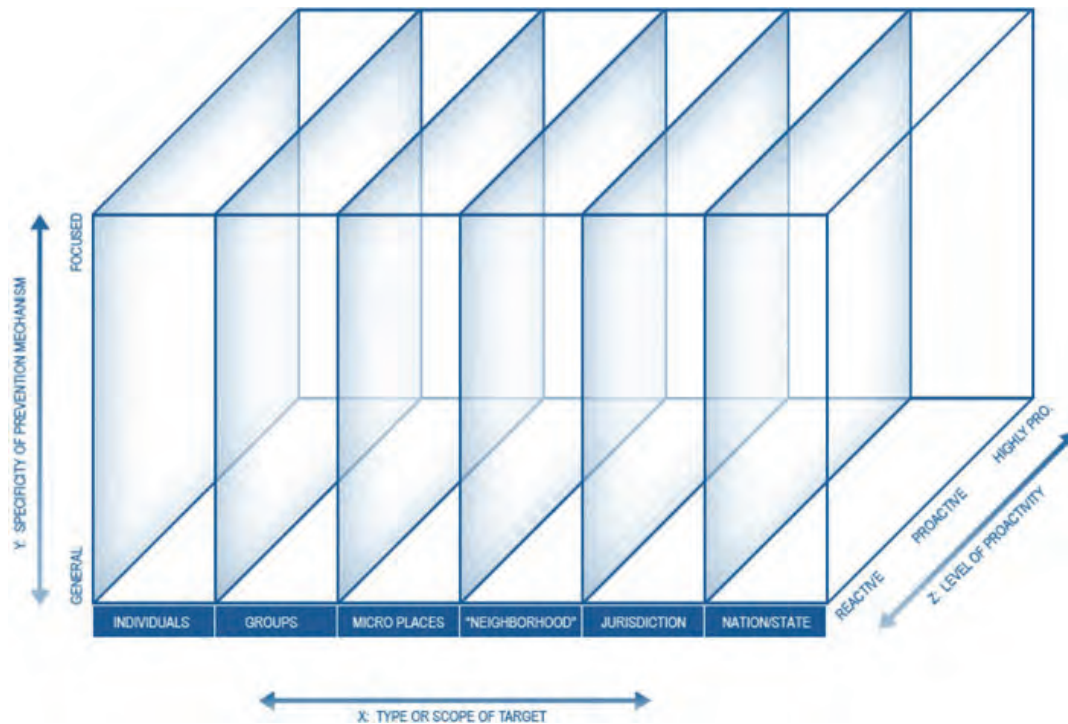
The creation of the three dimensions and their categories was done purposefully and empirically, and additional matrices should also take this approach. First, we sought to use the most common dimensions of police crime prevention efforts, as identified from research as well as the authors' extensive experiences working with and in police agencies, to ensure that police-recognized vernacular would be employed.<sup>7</sup> While the literature provided us with initial guidance on the three dimensions, we also examined all of the studies we collected (using methods described below) to see if they could be described by each of the three dimensions, a process that also helped us determine categories within the dimensions.

### Target of the intervention

For the X-axis, we use the type and scope of the target of an intervention, which indicates who or what is being targeted. Targets of policing interventions may range from individuals to larger social aggregations of individuals and the smaller and larger spaces they occupy, up to the jurisdiction, nation, or even global level. These are the most common targets for which police agencies organize and discuss their strategies. The "Individual" slab would include interventions that intend to deter

<sup>6</sup> The Matrix is available online at <http://gemini.gmu.edu/cebcp/matrix.html>.

<sup>7</sup> We drew on contemporary and foundational research describing the range of police activities, including the special *Crime and Justice: A Review of Research* volume on policing (Tonry and Morris 1992) and, in particular, Reiss's (1992) description of police organization, as well as Sherman's (1995) review of the police role in *Crime* (Wilson and Petersilia 1995). More recent volumes were also consulted, such as Weisburd and Braga (2006), as well as the systematic reviews and police literature reviews mentioned above.



**Fig. 1** The Crime Prevention Matrix

individuals generally or that target specific categories of persons, such as repeat offenders (e.g., Martin and Sherman 1986), potential juvenile drug users (e.g., Rosenbaum et al. 1994), or those who commit domestic/intimate partner violence (e.g., Sherman and Berk 1984). Strategies that focus on people offending in tandem, such as gangs or co-offenders, would be categorized into the “Groups” slab (e.g., pulling levers interventions to combat gang violence—e.g., Braga et al. 2001).

Next, we move toward larger social aggregations—places. Places can be described by size, from smaller or “micro” places, to larger geographic units. Micro-place interventions target very specific geographic locations such as a block, street segment, address, or cluster of blocks (see Eck and Weisburd 1995; Weisburd 2002; Weisburd et al. 2009). Interventions such as hot spot policing (e.g., Sherman and Weisburd 1995), problem-oriented policing focused on drug markets (e.g., Weisburd and Green 1995), and the use of civil remedies at problem addresses (e.g., Mazerolle et al. 2000), are common micro-place-based interventions. Larger and more amorphous places can include neighborhoods, census tracts, communities, and police boundaries (beats, sectors, districts) within a jurisdiction. Programs such as neighborhood watch (e.g., Bennett 1990), community policing, problem solving (e.g., Skogan et al. 1995), and foot patrol (e.g., Trojanowicz 1986) are often implemented in these types of areas.

While the vast majority of police agencies in the United States are confined by municipal boundaries, interventions can be city-, county-, or parish-wide, or even span across regions and states. These interventions are often much more general in nature. Studies of such interventions could include, for example, evaluating police enforcement of a city-wide ban on gun carrying (e.g. Villaveces et al. 2000) or studying the effects of a new jurisdiction-wide arrest policy. An even larger geographic aggregation is the nation/state, which is a politically distinct geopolitical area with laws and a criminal justice system that often determine sentencing and

corrections of offenders. For example, mandatory sentencing schemes or state laws prohibiting certain types of gun purchases might be classified here. Conceivably, one might evaluate efforts by federal law enforcement agencies or homeland security efforts intended to protect the nation at large.

### Level of focus

The Y-axis represents a second common dimension by which crime prevention strategies are often classified—the level of specificity of an intervention and its goals, from general to focused (Weisburd and Eck 2004). Characterizing crime prevention tactics on their degree of specificity is common and has been discussed by a number of scholars (e.g., Erickson and Gibbs 1975; Sherman and Berk 1984; Stafford and Warr 1993). Theoretically, this axis should be viewed as a continuum, since many tactics share both general and specific deterrent goals (see Sherman 1990), and divisions can be murky. But for simplicity, we characterize studies as “general” or “focused,” noting that the level of specificity of an intervention is an empirical matter. Tactics that are more general in their prevention mechanisms may include increasing patrol presence in a neighborhood (e.g., Kelling et al. 1974), zero tolerance, and crackdown approaches that are not specifically focused (e.g., Reiss 1985; Smith 2001), or DARE programs given to all seventh-grade students (e.g., Rosenbaum et al. 1994). Even hot spot policing interventions might be considered “general” (despite their focus on a specific place), if police are simply increasing patrol presence at hot spots and not targeting any person or group or carrying out a special operation or problem-solving scheme to reduce a certain type of crime (e.g., Sherman and Weisburd 1995).

Crime prevention interventions become more focused when they are tailored to specific types of problems or involve more tailored prevention tactics. These might involve, as Weisburd and Eck (2004) describe, the coordination of multiple agencies that handle different aspects of a particular problem, and they target specific mechanisms that produce crime. Specific programs might include using nuisance abatement laws to reduce drug dealing on a street block (e.g., Mazerolle et al. 2000); using specific prosecution schemes against those who are caught selling drugs and armed with a weapon (e.g., Abrahamse et al. 1991); employing the “pulling levers” approach against gang activity, which involves a combination of specific deterrence-related interventions (see Braga et al. 2001, 2008; McGarrell et al. 2006); or targeting specific risk factors for juvenile crime (e.g. Weisburd et al. 2008a). Hot spot policing might be more specific when a particular program is applied—for example, a hot spot approach specifically targeting stolen cars by running license plates along a quarter-mile stretch of a high-risk road (Taylor et al. 2010).

### Reactivity and proactivity

Finally, the Z-axis represents the level of reactivity or proactivity that an intervention exhibits. We categorize an intervention along this dimension using a three-point scale that reflects both the timing with which a program is implemented relative to a criminal event and also the time horizon for the program’s effects (e.g., long- versus short-term). In the mostly reactive realm of this scale are interventions that “strengthen the reaction” of the police and target the crime after or while it is occurring. Often, these are considered

"traditional" approaches to policing and include mainstays such as reactive arrests, follow-up investigations, and other tactics that target crimes and suspects after the fact. Common examples are mandatory arrests for domestic violence (see Sherman and Berk 1984), repeat offender targeting (see Martin and Sherman 1986), second responder programs for family abuse (Davis et al. 2007), or even zero tolerance if it is just reducing the discretion to arrest across a city. We also include random "preventive" beat patrol (whether in a vehicle or on foot) in this categorization (see Kelling et al. 1974), since assigning an officer to a beat has the intention of deterrence but is done primarily to ensure that all areas are covered for quick response to calls for service.

The proactive to highly proactive categorizations reflect those interventions that use analysis of previous incidents to prevent future crimes. Proactive strategies include interventions to reduce a recent crime flare up or to deter a crime most likely to happen tomorrow, such as crackdowns on particular high-crime areas (e.g., Lawton et al. 2005; Sherman and Weisburd 1995). Proactive strategies have a temporal aspect that is immediate and short-lived. Highly proactive strategies, in contrast, focus on early risk factors and long-term prevention. Such programs include gang-resistance education programs (e.g., Esbensen 2002), drug resistance programs (e.g., DARE), some problem-oriented policing interventions (e.g., Braga et al. 1999; Mazerolle et al. 2000), and after-school programs for juveniles.

### Dimensional overlap and flexibility

The categories within each dimension are meant to be flexible and fluid, and there may be overlap between dimensions. For example, it is possible that individual-based interventions are more "specific" by the nature of the type of target, but this is not always the case. General deterrent strategies commonly focus on individuals but are general in nature. Similarly, micro-place strategies might also be viewed as more specific, given that the targets themselves were smaller units of larger aggregates. To overcome this issue, we defined specificity to mean the specificity of the mechanism of the intervention rather than the target. So, for example, hot spot patrol at a micro-place (e.g., a street block or corner) is not considered a focused intervention unless the activities the police conducted at those locations, or the problem specified, were more defined than deterrent patrol. Examples might include officers initiating nuisance abatement proceedings for a problem place or setting up a roadblock to find drunk drivers. Overall, given past literature and our studies, we felt these to be the most common ways that interventions in policing (and crime prevention more generally) could be described.<sup>8</sup> By placing rigorous research studies into the Matrix according to how these dimensions describe them, we might then begin to see clustering of studies at certain intersecting dimensions, giving us a better understanding of the general characteristics of tactics that seem more promising.

<sup>8</sup> Indeed, there are other dimensions that could be used. For example, law and society scholars might be interested in a "constitutionality" continuum, which provides a measure of high- and low-constitutionality controversy. A "Herbert Packer" continuum might be added (see Packer 1964), which could be characterized as a continuum between individual rights and community rights/crime control. Mastrofski might add a "legitimacy" continuum (see Mastrofski 1999), which ranks interventions according to how much they might challenge the legitimacy of an agency (see also Tyler 2004). However, for our purposes here, these three dimensions represent the most commonly shared descriptives for policing.



## Data and methods for placing studies into the Matrix

### Study inclusion criteria and search method

To map evaluations of police interventions into the Matrix, we used two criteria, one methodological and the other outcome-based. In terms of methodological requirements, we only included studies that were at least moderately scientifically rigorous—specifically, randomized controlled experiments or quasi-experiments using matched comparison groups or multivariate controls. To assess methodological rigor, we were guided by the Scientific Methods Scale (SMS) designed by Sherman et al. for the University of Maryland's "What Works" report (discussed earlier) and updated in Sherman et al. (2002). In the Maryland Report, studies were assigned a value ranging from 1 to 5 based on the rigor of the evaluation methods used. For the Matrix, we only included policing studies that received an SMS score of 3 or higher. A score of "3," which we label as "moderately" rigorous, corresponds to studies having a "separate comparison group present but non-randomly constituted; extensive information provided on pre-treatment equivalence of groups; [and] obvious group differences on important variables."<sup>9</sup> For our purposes, we included studies only if the comparison group was the same type of unit as the intervention group (e.g., a police beat if the target area is a police beat). Additionally, the study had to meet at least one of the following criteria: (1) comparison group was well-matched, (2) use of multivariate controls, or (3) use of rigorous time series analysis.

Generally, Farrington and colleagues (2002) describe a score of "4" as studies with "separate comparison group present; extensive information provided on pre-treatment equivalence of groups; [and] only minor group differences evident." For policing studies in particular, Sherman and Eck (2002: 301) elaborate a "4" as "before-and-after large sample comparisons of treated and untreated groups." Thus, a non-randomized study with 20 treatment police beats and 20 comparison beats would be a 4 on the SMS scale, while an intervention in just one beat with a comparison beat would be scored a 3. We were guided by both of these definitions, but all studies that we coded as 4s were non-randomized individual-based studies with carefully matched comparison groups or place-based studies with multiple treatment places and multiple comparison places. We term these studies rigorous. Finally, a "5" was considered highly rigorous and included randomized experiments in which differences between groups were not greater than expected by chance, and the units for random assignment matched the units of analysis.

Our decision to include studies with moderate methodological rigor was for practical reasons. The goal of the Matrix is to serve as a translation tool for police to use scientific evidence to guide practice. While compromising on rigor is certainly never a goal in scientific analysis, the general knowledge gleaned from moderately rigorous studies may be valuable to police in generating tactics of at least reasonable effect. However, recognizing this, we also provide Matrix mappings in which these studies are excluded as a comparison between areas of the Matrix we are more

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<sup>9</sup> See the "Code Book for Methodological Rigor and Effect Size Computation" at the end of the Appendix of the Maryland Report for these descriptions.

certain about (in terms of outcome effectiveness). Additionally, for those studies that appeared in Sherman and colleagues' (1997, 2002) reviews, we were initially guided by the score given. We then reassessed the score if we found disagreement based on our review of the full text of the study. Then, we conducted our own assessment of the scientific rigor of studies published between Sherman and colleagues' (2002) review and December 2009 in order to create the most updated review of police evaluations.<sup>10</sup>

In addition to the methodological cutoff, we also set criteria that studies had to focus on interventions that were primarily police interventions (even though other agencies might be involved) and had to include crime or disorder as a measured outcome. Excluded studies, for instance, include community crime prevention programs that used police consultation at the outset but involved little or no police involvement in the actual program (e.g., Rosenbaum et al. 1986). We also excluded studies that only measured fear of crime as an outcome. While we do not think fear of crime is unimportant for police to focus on, we wanted to include only interventions that had some type of crime, disorder, or victimization measure in order to generate a Matrix that could be most useful for police in reducing crime. However, one could imagine additional Matrices that focus on other outcomes important in policing, such as fear of crime or police legitimacy.

To find these studies, we began with existing reviews of police literature, including the Maryland report and its update, existing systematic reviews on policing, and the NRC (2004) report. We also searched numerous library databases and as well as the websites of several professional and government organizations.<sup>11</sup> We located 97 studies published as of December 31, 2009, that met the methodological and substantive criteria for inclusion. Sixty-two studies (64%) were of moderate quality, 12 (12%) were rigorous, and 23 (24%) were randomized controlled experiments.

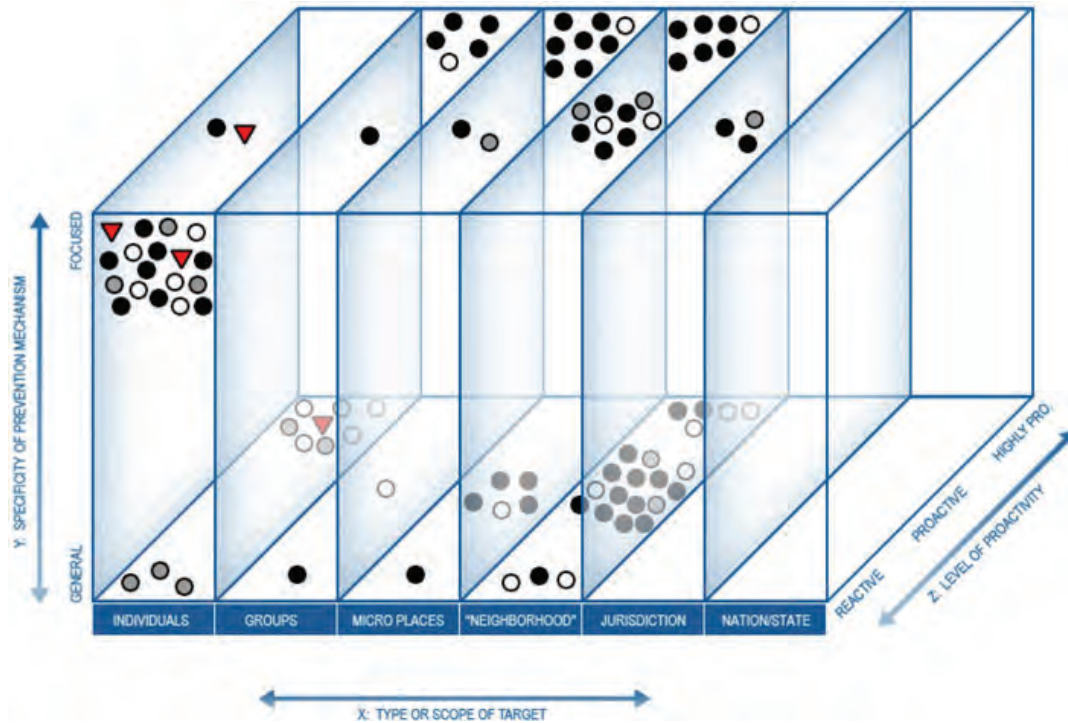
### Mapping studies into the Matrix

We mapped the selected studies into the Matrix along the three dimensions using a consensus strategy. Each study was initially coded separately by two of the three authors.<sup>12</sup> If the reviewers did not code the study consistently, the remaining author would also code the study, followed by group discussion to reach consensus. We encourage readers to view the Matrix, located online at <http://gemini.gmu.edu/cebcp/matrix.html>. This online interactive tool allows both researchers and practitioners to freely access and view the entire field of quasi-experimental and experimental policing research, including how these studies were coded and mapped into the Matrix. This transparency also allows for further suggestions about including studies we may have missed, or for authors to suggest alternatives about study coding or mapping. The Evidence-Based Policing Matrix is displayed in its entirety in Fig. 2. This visual mapping of the Matrix is not meant to be precise; dots are spread out only to aid with

<sup>10</sup> The Matrix will be updated yearly with new studies that fit these qualifications. The entire coding of each study is available with the Matrix tool to maximize both transparency and discussion about study placement.

<sup>11</sup> These databases included Criminological Abstracts, Criminal Justice Periodicals, Criminal Justice Periodical Index, National Criminal Justice Research Service, Dissertation Abstracts, and Google Scholar. We consulted publications from NIJ, the Police Foundation, the Police Executive Research Forum, the Office of Community Oriented Policing Services, and the Center for Problem-Oriented Policing. We plan to re-search these databases on a regular basis to update the Matrix with new studies.

<sup>12</sup> The studies were divided equally so that each author initially coded two-thirds of the studies.



**Fig. 2** The matrix mapped with 97 police intervention studies

visual presentation and are not statements about the relative proactivity or specificity of an intervention.

Additionally, we also present shape and color codes for each study to indicate the direction and statistical significance of the findings of the study. The codes are:

- ▼ *Statistically significant backfire effect* (upside-down triangle)<sup>13</sup> – indicates the outcome of the study was statistically significant, but in the opposite direction of the hypothesis. This would be considered a “harmful” intervention (see Weisburd et al. 2001), where an intervention significantly increased offending in some individuals or crime in some areas.
- *Non-significant effect* (white dot) – indicates the intervention did not lead to any statistically significant effect. Although some might interpret colloquially that the intervention “did not work,” Weisburd et al. (2003a) point out that such terminology is inaccurate. Statistical insignificance only states that, for this particular study, we cannot conclude that the null hypothesis of “no difference” is false.
- *Mixed effects* (gray dot) – indicates there were multiple primary outcomes in the study, at least one of which showed positive effects and at least one of which showed non-significant or backfire effects. Mixed effects might also include studies in which outcomes were only positive for a certain subgroup of targeted offenders or places. Although many studies have both significant and non-significant findings, we coded a study as having mixed results only when the authors emphasized the mixed nature of the findings. Examples might include arrest for domestic violence deterring employed but not unemployed suspects

<sup>13</sup> This symbol appears red in color on the website.



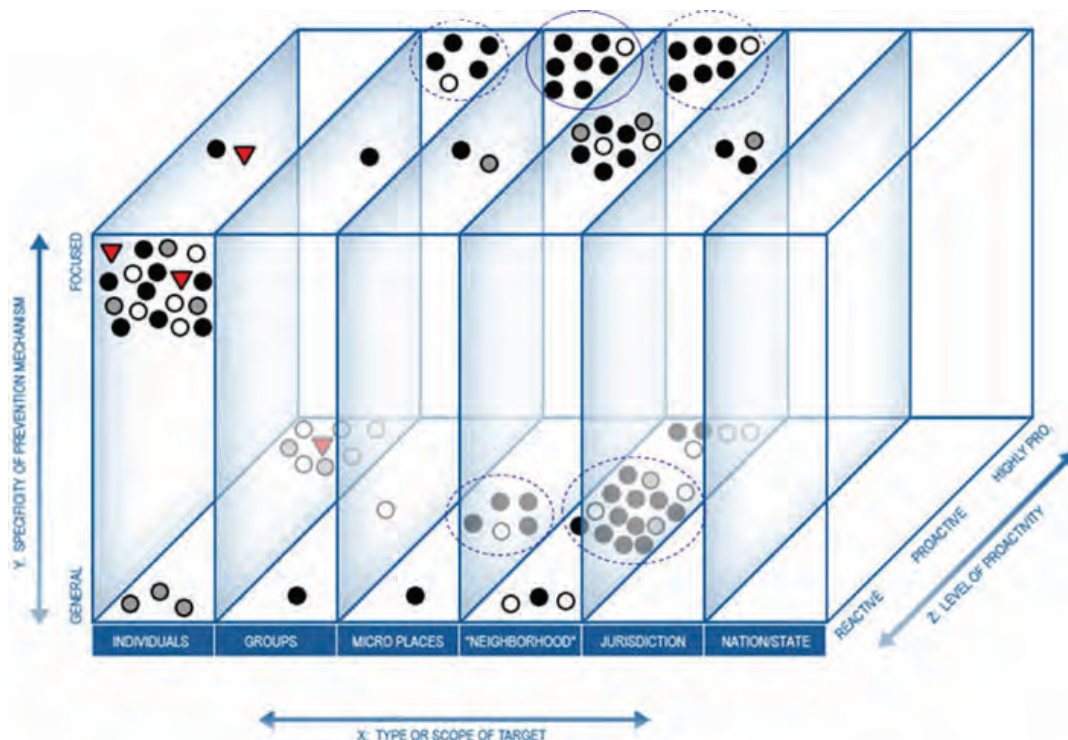
(see Sherman et al. 1992); restorative justice reducing recidivism for violent crime but not property crime (see Sherman et al. 2000); or crack house raids reducing crime but only for a 12-day period (see Sherman and Rogan 1995).

- *Significant effects* (black dot) – indicates that the intervention led to a statistically significant effect in reducing crime or criminality. Mapping the studies in this way allows the viewer to obtain five pieces of information about an intervention in a single visualization. The first four come from the single symbol itself: the intervention's target, specificity, proactivity, and effectiveness. However, the Matrix is interesting not simply because of its display of single studies or these four characteristics. The fifth piece of information results from the relative position of dots to each other, resulting in clusters of evaluated interventions at intersecting dimensions.

## Results

### Visual patterns

The clustering of studies that materializes from this mapping is a powerful visual. In particular, clustering of effective studies, or *realms of effectiveness*, circled in Fig. 3, facilitates generalization (and thus, translation) from the wide range of diverse policing research to the three-dimensional description of that realm. For example, four of the five realms of effectiveness involve interventions that are at least moderately proactive and/or that focus on places. In terms of interventions that target micro-places, those with greater focus and proactivity tend to fare well, although a



**Fig. 3** Realms of effectiveness

small realm of effectiveness is also found in more general, proactive intersections (e.g., general hot spot deterrent patrols).

While there is also much evidence that has been generated at the neighborhood level, as will be discussed below, the majority of these studies are of only moderate methodological quality compared to those in the micro-place slab. The overall weaker scientific strength of studies in this cluster is denoted by a broken-lined circle in Fig. 3. Effective studies in this realm focus on a variety of police tactics, ranging from more general community policing (e.g., Connell et al. 2008) and order maintenance strategies (e.g., Reiss 1985) to more focused strategies, such as door-to-door visits to gain intelligence and increase property marking (Laycock 1991) and using street closures to reduce gang crime (Lasley 1996). This broad range of interventions more generally reflects the typical organization of police agencies into precincts or beats, making it logical that many interventions would correspond to the “Neighborhood” realm. A further realm of effectiveness emerged in the Group slab, although we know much less about these interventions than about interventions targeting individuals. The research that does exist seems to indicate that highly proactive and specific tactics such as the “pulling levers” approach (see Braga et al. 2008; Kennedy 2009) are promising.

The Matrix also shows us what single studies do not. For example, notice the first “slab” of studies mapped in the “Individuals” area. This grouping indicates to police agencies that when they use strategies focused on individuals, the evidence often shows mixed, non-significant, and sometimes backfiring results. The Matrix also shows that many of these individual-based strategies are reactive—a quality that has been recognized by both police practitioners and researchers as being less effective in fighting crime. About half of these studies focus on responses to domestic violence (either arrest or second responder programs), and while some of these studies show significant positive results (e.g., Sherman and Berk 1984), the evidence on police responses to domestic violence is overall quite mixed, with 2 of these 12 studies showing mixed results, 4 showing non-significant results, and 2 finding backfire effects. Even those individual approaches that are more proactive show mixed or ineffective results (DARE is one example). Although there are some studies in this slab that point to beneficial results (particularly when interventions are more focused), this particular region of the Matrix generally suggests that targeting individuals may be less effective than focusing on other types of targets. However, these realms are where the vast majority of police activity occurs (e.g., response to 911 and reactive arrests, investigations, and offender targeting).

### Statistical comparisons across dimensions

To better quantify patterns in this visualization, we provide both descriptive and bivariate statistics. Table 1 shows the breakdown of the studies by dimension, outcome, and methodological rigor. While many policing evaluation studies examined individual-based interventions (32.0%), neighborhood-based studies constitute the largest group (40.2%). Slightly more than half of the studies (56.7%) examined focused interventions, and over 70% evaluated interventions that were at least moderately proactive. This place-based, focused, and proactive bias within the more rigorous evaluation literature in policing is not coincidental, nor does it reflect the reality of police practice, which we know is remarkably individual-based, reactive, and general in nature. Rather, these overall tendencies in the research reflect the

**Table 1** Frequencies for characteristics of the 97 studies by dimensions

<b>X-axis (Target)</b>	<i>n</i>	%	<b>Outcome</b>	<i>n</i>	%
Individuals	31	32.0	Mixed results	14	14.4
Groups	8	8.2	Non-significant results	24	24.7
Micro-places	16	16.5	Significant backfire	4	4.1
Neighborhoods	39	40.2	Significant success	55	56.7
Jurisdictions	3	3.1	Total	97	100.0
Total	97	100.0			
<b>Y-axis (Specificity/focus)</b>	<i>n</i>	%	<b>Methodological rigor</b>	<i>n</i>	%
General	42	43.3	Moderately rigorous (“3”)	62	63.9
Focused	55	56.7	Rigorous (“4”)	12	12.4
Total	97	100.0	Randomized experiment (“5”)	23	23.7
			Total	97	100.0
<b>Z-axis (Proactivity)</b>	<i>n</i>	%			
Mostly reactive	26	26.8			
Proactive	38	39.2			
Highly proactive	33	34.0			
Total	97	100.0			

innovations of scholars and police practitioners who have tried to push the field forward through these evaluations.

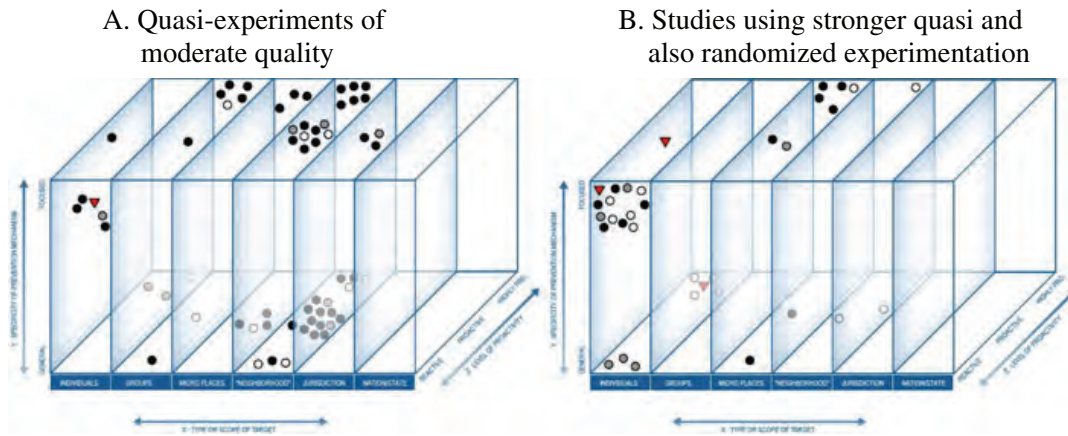
The dominance of moderately rigorous and also successful studies in the Matrix deserves some attention so that statistically significant findings are not over-emphasized. In particular, the cross-tabulation in Table 2 shows the distribution of studies by SMS method score (3, 4, or 5) and whether the studied evidence clearly indicated a statistically significant successful outcome. A significant relationship emerges, indicating that as studies become more methodologically rigorous, they are less likely to show clear significant success. This provides specific and updated support from the policing literature for Weisburd et al’s (2001) finding that, as studies increase in methodological rigor, they are less likely to find positive results.

This tendency becomes even more visually obvious when comparing mappings of moderately rigorous studies of SMS=3 (Fig. 4a) versus more rigorous quasi-experimental and experimental designs of SMS=4 or 5 (Fig. 4b). Notice that many

**Table 2** Cross-tabulation of SMS method score versus study results

	SMS method score		
	3	4	5
Sig. success	43 (69.4%)	4 (33.3%)	8 (34.8%)
Any other result	19 (30.6%)	8 (66.7%)	15 (65.2%)
Column total	62 (100%)	12 (100%)	23 (100%)

$$\chi^2 = 11.213, p = .004$$



**Fig. 4** Comparisons of studies in the Matrix of moderate and strong methods. **a** Quasi-experiments of moderate quality. **b** Studies using stronger quasi and also randomized experimentation

studies that showed statistically significant positive outcomes (especially in the neighborhood slab) disappear when a stronger methodological cutoff point is employed. Also visually striking is that more interventions targeting individuals appear in Fig. 4b. This indicates that we know with fairly good certainty that individual-level, reactive strategies in policing do not produce clearly positive results.

But what might be said of intersecting dimensions and the likelihood that studies of a certain method, outcome, or type might fall into them? In Table 3, we present cross-tabulations examining the relationship between each of our three axes and study results. We have dichotomized each variable to better display the overall trends in our data. For the X-axis, we collapsed the individual and group categories into one “person-based” category and combined the micro-place and neighborhood categories into one “place-based” category. (The three jurisdiction-level studies were excluded from this analysis.) For results, we again examine whether a study resulted in a statistically significant success or not.

The cross-tabulation shows a highly significant difference in results between the two X-axis general categories represented in the Matrix—person versus place-based. More than two-thirds (69.1%) of place-based studies showed significant crime and disorder reductions in contrast to 38.5% of person-based interventions, a relative difference of 79% ( $\chi^2=8.705, p<.01$ ). This reinforces quantitatively our finding that realms of effectiveness were generally found in the place-based slabs of the Matrix.<sup>14</sup> In examining the Y-axis, focused interventions are 34% more likely to find a statistically significant effect than general interventions (63.6 to 47.6%), although this finding is not statistically significant ( $\chi^2=2.489, p>.10$ ). This lends support to Weisburd and Eck’s (2004) contention that focused interventions are more effective in reducing crime and disorder. Finally, we combined the proactive and highly proactive Z-axis categories to compare proactive to reactive studies. The cross tabulation shows a marginally significant difference between the two categories, with proactive interventions being 47% more likely to reduce crime (62.0 to 42.3%;  $\chi^2=2.997, p<.10$ ).

<sup>14</sup> Removing the neighborhood-based studies, which are generally weaker methodologically, would further strengthen the basis for this generalization.

**Table 3** Cross tabulations of X, Y, and Z axes versus study results

	X-axis		Y-axis		Z-axis	
	Person-based	Place-based	General	Focused	Reactive	Proactive
Sig. success	15 (38.5%)	38 (69.1%)	20 (47.6%)	35 (63.6%)	11 (42.3%)	44 (62.0%)
Any other result	24 (61.5%)	17 (30.9%)	22 (52.4%)	20 (36.4%)	15 (57.7%)	27 (38.0%)
Column total	39 (100%)	55 (100%)	42 (100%)	55 (100%)	26 (100%)	71 (100%)

$\chi^2$  X-axis=8.705;  $p$ =.003

$\chi^2$  Y-axis=2.489;  $p$ =.115

$\chi^2$  Z-axis=2.997;  $p$ =.083

### Using the Matrix to advance evidence-based research, practice, and funding

In general, these results demonstrate quantitatively the relevance of the realms of effectiveness we identified in Fig. 3. Proactive, focused, place-based interventions are more likely to reduce crime and disorder than strategies concentrating on individuals, or those that are reactive and/or general in nature. And, when only looking at the highest-quality studies, this finding is even more pronounced. Among place-based strategies, interventions targeting micro-places appear to be particularly effective based on the highest quality evidence. The visualization of effective interventions at these intersecting dimensions helps illuminate why some interventions are more effective than others by revealing broad patterns in the characteristics, or strategic dimensions, of successful interventions. This study provides a first attempt to identify and quantify the strength of these realms and to provide researchers and police with statements about “what works” at a level of generalization higher than that of programmatic assessments.

We organized the research in this way because of our interest in developing a translation tool that would make the field of police evaluation research meaningful to practitioners. Hence, we did not restrict ourselves to selecting only those studies that involved randomized controlled experiments, although we do include in our tool the ability to examine only those studies that use more highly rigorous evaluation methods. We also recognize criticisms of vote counting in research syntheses (e.g., Wilson 2001) and do not suggest that a count of studies in a particular area of the Matrix provides definitive conclusions about “what works” in policing. Rather, this approach allows us to develop some initial generalizations about the state of policing research and the types of strategies that appear most effective. At the same time, it presents the research in a way that is more accessible and translatable for both researchers and practitioners. In future work, researchers might apply meta-analytic techniques to quantify effects from strategies falling into different areas of the Matrix more precisely. Researchers might also create similar matrices for studies assessing different types of policing outcomes (e.g., police legitimacy, use of force, discretion).

Through this generalization, the results of our Matrix, as well as the tool itself, have numerous implications for research and practice. Most obviously, the results can guide police agencies in the assessment and selection of strategies. As one example, we can consider how the Matrix might inform the development and



application of strategies to combat auto theft. While an agency might use traditional method—such as lookout lists of recently stolen vehicles, general patrol and random license plate checks, reactive investigation of auto thefts, and/or the use of decoy vehicles—the Matrix suggests approaches that are more fruitful. Given the evidence for the efficacy of place-based approaches to policing, an agency might direct its crime analysts to identify micro-hot spots of stolen and recovered vehicles. The agency might then focus directed patrol and the use of license plate reader devices on these hot spots (e.g., Taylor et al. 2010). Or, if agencies wish to address violent co-offenders or gangs, a general, more reactive policing approach may be less effective than examples found in the more highly proactive, specific portion of the Matrix. And yet another example: police leadership that wishes to transition its first and second line supervisors toward a more evidence-based approach might incorporate the Matrix into its promotions process. After training a force on “what works” and also in using the Matrix, supervisors’ tactical portfolios might be mapped within the Matrix to determine the alignment of that portfolio with the evidence. A similar exercise could be carried out to assess a unit, a police chief, an agency more generally, or even for any one of these entities to assess themselves. Lum (2009) and the Matrix web site outline in detail how agencies might use the Matrix to inform primary sectors of policing, including (1) tactical and strategic development of crime reduction interventions in different units; (2) promotions, assessment, and accountability systems; (3) managerial and leadership arenas such as Compstat; (4) recruit training and in-service; and (5) crime analysis, research, and planning.

In addition, the Matrix can provide guidance to practitioners, researchers, and funders of research as to what types of evaluations are needed and useful. First, it enables us to see where researchers have amassed the most and the highest-quality evidence in terms of programmatic dimensions that are meaningful to practitioners. For example, the policing of gangs is a high-priority issue for police, yet very little strong evaluation research exists in the “groups” slab of the Matrix to meet this demand for evaluation. Second, it facilitates strategic assessment of approaches that are central to current innovations and police reform. The significant differences between the effectiveness of strategies along the key dimensions of the Matrix (e.g., place-based versus individual-based approaches) highlight the potential efficacy of different strategies and point to areas where research can make the most impact. Further, by illustrating the interactions between key strategic dimensions of police interventions, the Matrix can reveal more about the types of focused or proactive approaches that work best and the types of targets for which they are most beneficial. In turn, these intersecting dimensions can provide the skeletal base for the creation of strategies at various levels of policing.

Additionally, organizational tools like the Matrix can also be used as a “common ground” for conversations between researchers, police practitioners, and funding agencies when collaborating to evaluate, study, and ultimately reduce crime. In many ways, the Matrix builds on officer “experience” by connecting to officers with familiar vernacular. For example, a police agency may be interested in testing certain types of interventions, such as crackdowns on gangs or illegal gun carrying. The researcher, however, may be interested in improving the quantity of high-quality evaluations in the proactive place-based regions of the Matrix, or in conducting more rigorous experiments of neighborhood-level policing. In this scenario, the Matrix

could be used to elicit discussion and negotiation between the researcher and the police agency in a way that keeps the agency grounded in evidence-based regions but that does not divorce the police researcher from the real needs of the police agency. Solutions might thus include a quasi-experimental study testing pulling-levers approaches in multiple gang territories, or perhaps a randomized repeated measures study of crackdowns on gun carrying in high-risk patrol beats.

Further, agencies funding research and/or programs—such the National Institute of Justice, the Bureau of Justice Assistance, and the Office of Community Oriented Policing Services (COPS)—could potentially use tools like the Matrix to fund high-quality research and interventions in strategic ways that facilitate evidence-based practice. Such agencies might give priority, for example, to “low-risk” funding that would support increasing the quality of programs and research in intersections and realms of the Matrix where studies have already shown promising results. “Medium risk” funding might support research in areas of the Matrix where there has been little or no research but that are closer to more promising realms. For example, studies of group interventions that are only moderately proactive or that focus on known groups of offenders may fit here. Finally, “high risk” programs and research would fall within domains of the Matrix that have shown little promise or even backfire effects. In this way, our Matrix and similar tools could be used to facilitate evidence-based *funding* as well as evidence-based practice.

Finally, while speculative, we believe that this visualization of the research evidence may serve as a particularly effective tool with which to translate research for practitioners and other non-technical audiences, a goal that cannot be divorced from the intensions of evaluation. Scholarly assessments of research, both narrative and quantitative, are no doubt important and essential, but visualization and, further, experiential application of that visualization can be key approaches to learning, as education researchers have discovered (Clark et al. 2005; Mayer 2003). The Matrix also addresses key dimensions of knowledge utilization identified in literature on scientific dissemination (National Center for the Dissemination of Disability Research 1996; Nutley et al. 2007). More specifically, research is more likely to be used in practice when it is timely, accessible, and user-friendly, and when it is packaged attractively, all of which the Matrix accomplishes.

Of course, the Matrix is far from being the cure-all to institutionalizing scientific research and evidence into police practice. But, efforts like this may represent the “next step” in translating scientific evidence into practice and institutionalizing evidence-based policing. Indeed, there are major and well-known cultural, ideological, political, financial, and practical barriers in policing that regularly block change, science, innovation, new ideas, evidence, and systematic information at every turn (Lum 2009; Sherman 1984, 1998; Weisburd et al. 2003b; Willis et al. 2007). Incorporating evidence into practice requires not only building upon the already-existing infrastructure for evidence-based approaches, but also creating a stronger capacity in agencies to implement effective interventions and to maintain the practice of evidence-based policing. Practical changes must occur within police agencies for evidence-based policing to be used, including drastically increasing the number and skill sets of crime analysts and more freely interacting with academic and evaluation researchers. At the same time, researchers can perhaps facilitate these changes through scientific assessment and translation of the sort that we have presented here.

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# Ideas in American Policing



July 1998

## *Evidence-Based Policing*

By Lawrence W. Sherman

### Abstract

The new paradigm of “evidence-based medicine” holds important implications for policing. It suggests that just doing research is not enough and that proactive efforts are required to push accumulated research evidence into practice through national and community guidelines. These guidelines can then focus in-house evaluations of what works best across agencies, units, victims, and officers. Statistical adjustments for the risk factors shaping crime can provide fair comparisons across police units, including national rankings of police agencies by their crime prevention effectiveness. The example of domestic violence, for which accumulated National Institute of Justice research could lead to evidence-based guidelines, illustrates the way in which agency-based outcomes research could further reduce violence against victims. National pressure to adopt this paradigm could come from agency-ranking studies, but police agency capacity to adopt it will require new data systems creating “medical charts” for crime victims, annual audits of crime reporting systems, and in-house “evidence cops” who document the ongoing patterns and effects of police practices in light of published and in-house research. These analyses can then be integrated into the NYPD Compstat feedback model for management accountability and continuous quality improvement.

*Most of us have thought of the statistician's work as that of measuring and predicting . . . but few of us have thought it the statistician's duty to try to bring about changes in the things that he [or she] measures.*

—W. Edwards Deming

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Of all the ideas in policing, one stands out as the most powerful force for change: police practices should be based on scientific evidence about what works best. Early in this century, Berkeley Police Chief August Vollmer's partnership with his local university helped generate this idea (Carte and Carte 1975), which was clearly derived from that era's expansion of the scientific method into medicine, management, agriculture, and many other fields (Cheit 1975). While science had greater initial impact in those other professions during the first half of the century, policing in recent decades has been moving rapidly to catch up. However, any assessment of this idea in modern policing must begin with an accurate benchmark: catching up to what? More complete evidence on the linkage between research and practice suggests a new paradigm for police improvement and for public safety in general: evidence-based crime prevention.

For years, Sherman (1984, 1992) and others have used medicine as the exemplar of a profession based upon strong scientific evidence. Sherman has praised medicine as a field in which practitioners have advanced training in the scientific method and keep up-to-date with the most recent research evidence by reading medical journals. He has cited the large body of randomized controlled experiments in medicine—now estimated to number almost one

million in print (Sackett and Rosenberg 1995)—as the highly rigorous scientific evidence used to guide medical practices. He has suggested that policing should therefore be more like medicine.

Sherman was right about the need for many more randomized experiments in policing, but wrong about how much medicine was really based on scientific research. New evidence shows that doctors resist changing practices based on new research just as much as police do, if not more so. Closer examination reveals medicine to be a battleground between research and practice, with useful lessons for policing on new ways to promote research. Those lessons come from a new strategy called “evidence-based medicine,”<sup>1</sup> “widely hailed as the long-sought link between research and practice” (Zuger 1997) to solve problems like the following (Millenson 1997, 4, 122, 131):

- An estimated 85 percent of medical practices remain untested by research evidence.
- Most doctors rarely read the 2,500 medical journals available, and instead base their practice on local custom.
- Most studies that do guide practice use weak, non-randomized research designs.

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<sup>1</sup> The term “evidence” in this monograph refers to scientific, not criminal, evidence.

Medicine, in fact, seems just as resistant to the use of evidence to guide practice as are fields with lower educational requirements, such as policing. The National Institutes of Health (NIH) Consensus Guidelines are a case in point. NIH convenes advisory boards to issue to physicians recommendations that are based on intensive reviews of research evidence on specific medical practices. These recommendations usually receive extensive publicity, and are reinforced by mailings of the guideline summaries to some one hundred thousand doctors. But according to a RAND evaluation, doctors rarely change their practices in response to publication of these guidelines (Kosecoff et al. 1987, as cited in Millenson 1997). Thus three years after research found that heart attack patients treated with calcium antagonists were more likely to die, doctors still prescribed this dangerous drug to one-third of heart attack patients. Eight years after antibiotics were shown to cure ulcers, 90 percent of ulcer patients remained untreated by antibiotics (Millenson 1997, 123–25).

## Evidence Cops

The struggle to change medical practice based on research evidence has a long history, with valuable implications for policing. In the 1840s, Ignaz Semmelweis found evidence that maternal death in childbirth could be reduced if doctors



## *One way to describe people who try to apply research is the role of “evidence cop.”*

washed their hands before delivering babies. He then tried to apply this research to medical practice in Vienna, which led to his being driven out of town by his boss, the chief obstetrician. Hundreds of thousands of women died because the profession refused to comply with his evidence-based guidelines for some forty years. The story shows the important distinction between merely doing research and attempting to apply research to redirect professional practices.

One way to describe people who try to apply research is the role of “evidence cop.” More like a traffic cop than Victor Hugo’s detective Javert, the evidence cop’s job is to redirect practice through compliance rather than punishment. While this job may be as challenging as herding cats, it still consists of pointing professionals to practice “this way, not that way.” As in all policing, the success rate for this job varies widely. Fortunately, the initial failures of people like Semmelweis paved the way for greater success in the 1990s.

Consider Scott Weingarten, M.D., of Cedars-Sinai

Hospital in Los Angeles. As director of the hospital’s Center for Applied Health Services Research, Weingarten is an evidence-cop-in-residence. His job is to monitor what the 2,250 doctors are doing to patients at the hospital and to detect practices that run counter to recommendations based on research evidence. He does this through prodding rather than punishment, convening groups of doctors who treat specific maladies to discuss the research evidence. These groups then produce their own consensus guidelines for practices that become hospital policy. Thirty-five such sets of guidelines were produced in Weingarten’s first four years on the job (Millenson 1997, 120).

What NIH, Weingarten, and the 1995 founders of the new journal called *Evidence-Based Medicine* are all trying to do is to push research into practice. Just as policing has become more proactive at dealing with crime, researchers are becoming more proactive about dealing with practice. This trend has developed in many fields, not just medicine.

Increased pressure for “reinventing government” to focus on measurable results is reflected in the 1994 U.S. Government Performance Results Act (GPRA), which requires all federal agencies to file annual reports on quantitative indicators of their achievements. Education is under growing pressure to raise test scores as proof that children are learning, which has led to increased discussion of research evidence on what works in education (Raspberry 1998). And the U.S. Congress has required that the effectiveness of federally funded crime prevention programs be evaluated using “rigorous and scientifically recognized standards and methodologies” (House 1995, sec. 116). All this sets the stage for a new paradigm for making research more useful to policing than it has ever been before.

### **Key Questions**

In suggesting a new paradigm called evidence-based policing, there are four key questions to answer: What is it? What is new about it? How does it apply to a specific example of police practice? How can it be institutionalized?

#### ***What is it?***

Evidence-based policing is the use of the best available research on the outcomes of police work to implement guidelines and evaluate agencies, units, and officers. Put more simply,

evidence-based policing uses research to guide practice and evaluate practitioners. It uses the best evidence to shape the best practice. It is a systematic effort to parse out and codify unsystematic “experience” as the basis for police work, refining it by ongoing systematic testing of hypotheses.

Evaluation of ongoing operations has been the crucial missing link in many recent attempts to improve policing. If it is true that most police work has yet to go “beyond 911” (Sparrow, Moore, and Kennedy 1990), the underlying reason may be a lack of evaluation systems that clearly link research-based guidelines to outcomes. It is only with that addition that policing can become a “reflexive” or “smart” institution, continuously improving with ongoing feedback.

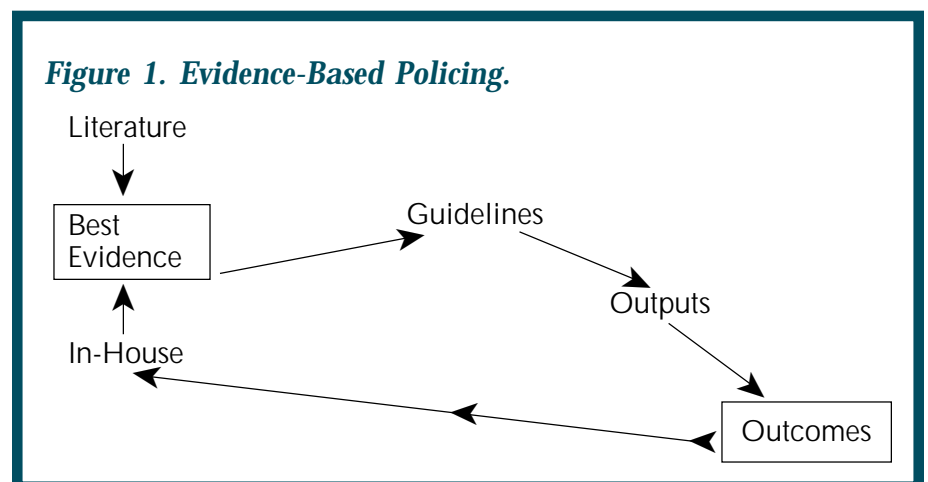
The basic premise of evidence-based practice is that we are all entitled to our own opinions, but not to our own facts. Yet left alone to practice individually, practitioners do come up with their own “facts,” which often turn out to be wrong. A recent survey of 82 Washington State doctors found 137 different strategies for treating urinary tract infections (Berg 1991). No doubt the same result could be found for handling domestic disturbances. A study evaluating the accuracy of strep throat diagnoses based on unstructured examination by experienced pediatricians found it

far inferior to a systematic, evidence-based checklist used by nurses. The mythic power of subjective and unstructured wisdom holds back every field and keeps it from systematically discovering and implementing what works best in repeated tasks.

A prime example of the power of systematic, ongoing evaluations comes again from medicine. In 1990, the New York State Health Department began to publish death rates for coronary bypass surgery grouped by hospital and individual surgeon. This action was prompted by research showing that while the statewide average death rate was 3.7 percent, some doctors ran as high as 82 percent. Moreover, after adjusting for the risk of death by the pre-operation condition of the patient caseload, patients were 4.4 times more likely to die in surgery at the least successful hospitals than at the best hospitals. Despite enormous opposition from hospitals and surgeons, these data were made

public, revealing a strong practice effect: the more operations doctors and hospitals did each year, the lower the risk-adjusted death rate. Using this clear correlation to push low-frequency surgeons and hospitals out of this business altogether, hospitals were able to lower the death rate in these operations by 40 percent in just three years (Millenson 1997, 195).

Evidence-based policing is about two very different kinds of research: basic research on what works best when implemented properly under controlled conditions, and ongoing outcomes research about the results each unit is actually achieving by applying (or ignoring) basic research in practice. This combination creates a feedback loop (fig. 1) that begins with either published or in-house studies suggesting how policing might obtain the best effects. The review of this evidence can lead to guidelines taking law, ethics, and community





culture into account. These guidelines would specify measurable “outputs,” or practices that police are asked to follow. Their varying degrees of success at delivering those outputs can then be assessed by tracking risk-adjusted “outcomes,” or results over a reasonably long follow-up period. These outcomes may be defined in several different ways: offenses per 1,000 residents, repeat victimizations per 100 victims, repeat offending per 100 offenders, and so on. The observation that some units are getting better results than others can be used to further identify factors associated with success, which can then be fed back as new in-house research to refine the guidelines and raise the overall success level of the agency. Such research could also be published in national journals or at least kept in an agency database as institutional memory about success and failure rates for different methods.

### ***What is new about it?***

Skeptics may say that there is nothing new in evidence-based policing, and that other paradigms already embrace these principles. On closer examination, however, we will see that no other paradigm contains the principles for its own implementation. No other paradigm contains a principle for both changing practices and measuring the success of those changes with risk-adjusted

***Evidence-based policing is clearly different from, but very helpful to, all three present paradigms of policing.***

outcomes research (like bypass surgery death rates). No other paradigm—not even NYPD’s Computerized Crime Comparison Statistics (Compstat) strategy (Bratton with Knobler 1998)—uses scientific evidence to hold professionals accountable for results in peer-reviewed and even public discussions of outcomes evidence.

Evidence-based policing is clearly different from, but very helpful to, all three present paradigms of policing. Incident-specific policing, or 911 responses, currently lack any outcomes measure except time out of service. Police officers who take too much time to handle a call are sometimes accused of shirking and are urged by supervisors to work faster.<sup>2</sup> But no one tracks the rate of repeat calls by officer or unit to see how effective the first response was in preventing future problems. Evidence-based policing could

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<sup>2</sup> This sounds oddly like the pressure for drive-in, drive-out childbirth health insurance now barred by federal law.

use such outcomes to justify longer time spent on each call on the basis of an officer’s average results, rather than issuing a crude demand that he or she stay within an average time limit. It could also place much more emphasis on learning how to deal with each call most effectively and preventively, a question that currently gets little attention.

Community policing, however defined, is not clearly linked to evidence about effectiveness in preventing crime. It is much more about how to do police work—a set of outputs—than it is about desired results, or outcomes. Working with the community and listening to and respecting community members are all important elements of the paradigm. But that paradigm alone has been easy for many officers to ignore. Adding the accountability systems from the paradigm of evidence-based policing could actually make police far more active in working with the community.

Problem-oriented policing is clearly the major source for

evidence-based policing. Herman Goldstein's writings (1979, 1990), as well as John Eck and William Spelman's SARA model (1987), clearly emphasize assessment of problem-solving responses as a key part of the process. Yet there is no clear statement about the use of scientific evidence either in selecting strategies for responding to problems or in monitoring the implementation and results of those strategies (Sherman 1991). Reports on problem-oriented policing have so far produced little evidence either from controlled tests or outcomes research. Because the paradigm stresses the unique characteristics of each crime pattern, problem-oriented policing has not been used to respond to highly repetitive situations like domestic assaults or disputes. Few comparisons of different methods for attacking the same problem have been developed. Few officers are even held accountable for not implementing a problem-solving plan they have agreed to undertake. Problem-oriented policing has clearly revolutionized the way many police think about their objectives, moving them away from a narrow focus on each incident to a broader focus on patterns and systems. But in the absence of pressure from an evidence-based approach to evaluating success and management accountability, problem-oriented policing has been kept at the margins of police work.

NYPD's Compstat strategy (Bratton with Knobler 1998) has pushed the results accountability principle farther than ever before, but it has not used the scientific method to assess cause and effect. Successful managers are rewarded, but successful methods are not pinpointed and codified.

What evidence-based policing adds to these paradigms is a new principle for decision making: scientific evidence. Most police practice, like medical practice, is still shaped by local custom, opinions, theories, and subjective impressions. Evidence-based policing challenges those principles of decision making and creates systematic feedback to provide continuous quality improvement in the achievement of police objectives (see Hoover 1996). Hence the inspiration for this paradigm is not only medicine and its randomized trials, but also the principles of quality control in manufacturing developed by Walter Shewhart (1939) and W. Edwards Deming (1986). These principles were initially rejected by U.S. business leaders, but were finally embraced in the 1980s after Japanese industries used them to far surpass U.S. manufacturers in the quality of their products.

What makes both policing and medicine different from manufacturing, of course, is the far greater variability in the raw material to be processed—human beings. That is what gives the gold standard of evaluation research, the randomized

controlled trial, both its strength and its limitations. The strength of the research design, pioneered in policing by the Police Foundation, is its ability to reduce uncertainty about the average effects of a policy on vast numbers of people. The limitation of the research design is that it cannot escape variability in treatments, responses, and implementation.

The variability of treatments in policing is much like that in surgery, which stands in sharp contrast to pharmaceuticals. While the chemical content of medical drugs is almost always identical, the procedural content of surgery varies widely. Similarly, the style and tone each officer brings to a citizen encounter varies enormously and can make a big difference in the outcome of a specific case. Dosage, timing, and follow-up of both drugs and police work can vary widely in practice.

Even holding treatment constant, there is evidence that both patients and offenders respond to treatments with wide variations. Some of these responses, allergic reactions, can kill some people with treatments that cure most others. Offenders are known to vary in their responses to police actions by individual, neighborhood, and city. And implementation of new practices based on controlled experiments in both medicine and policing varies according to how well research is communicated, how much information is created

about whether practices actually change, and how much reinforcement there is for the change, both positive and negative.

Evidence-based policing assumes that experiments alone are not enough. Putting research into practice requires just as much attention to implementation as it does to controlled evaluations. Ongoing systems for researching implementation can close the feedback loop to create the principle of industrial quality improvement.

***How does it apply to a specific example of police practice?***

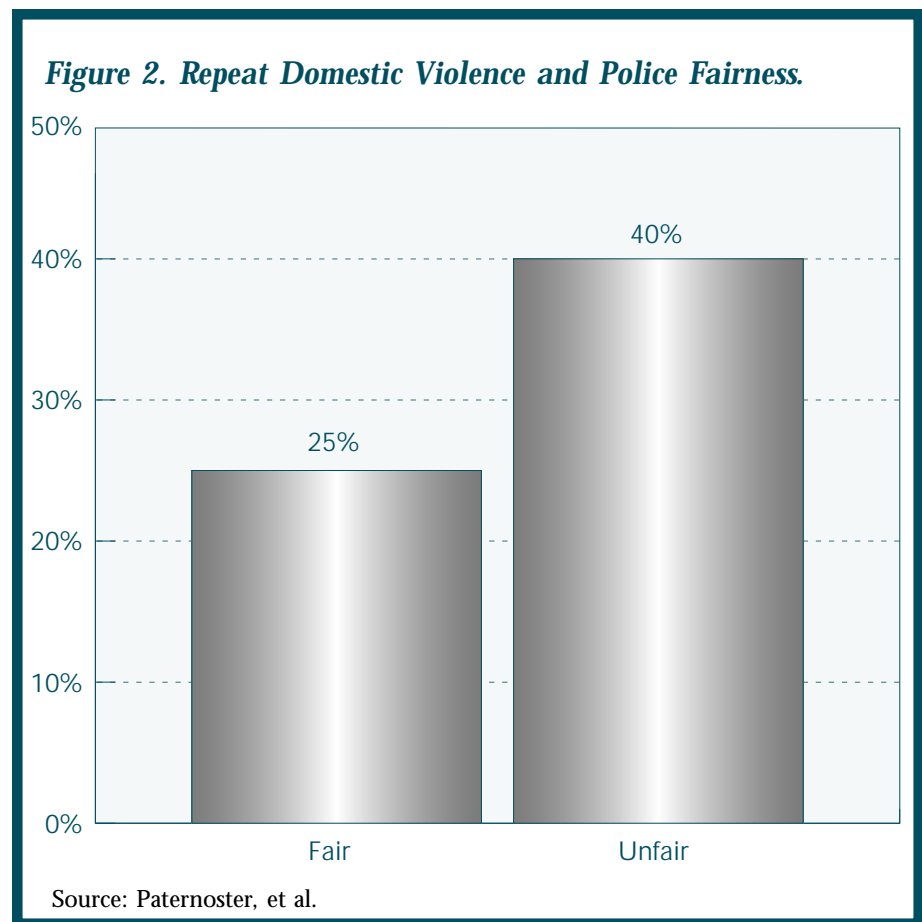
The policing of domestic violence offers a clear illustration of what is new about the evidence-based paradigm. Domestic violence has been the subject of more police practices research than any other crime problem. The research has arguably had little effect on police practice, at least by the new standards of evidence-based medicine. Yet the available evidence offers a fair and scientifically valid approach for holding police agencies, units, and officers accountable for the results of police work, as measured by repeated domestic violence against the same victims.

The National Institute of Justice (NIJ) and the Police Foundation have provided policing with extensive information on what works to prevent repeated violence. The

research has also shown that, like surgery, police practices vary greatly in their implementation. These variations in practice cause varying results for repeat offending against victims. Even holding practice constant, responses to arrest vary by offender, neighborhood, and city. Finally, research shows very poor compliance with mandatory arrest guidelines after they are adopted (Ferraro 1989).

There are many varieties of arrest for misdemeanor domestic violence. The offender may or may not be handcuffed, arrested in front of family and neighbors, given a chance to explain his version of events to the police, or

treated with courtesy and politeness. Do these variations on the theme of arrest make a difference? They should, according to the “defiance” theory of criminal sanction effects (Sherman 1993). And they did in Milwaukee, according to Raymond Paternoster and his colleagues (1997). The Milwaukee evidence reveals that controlling for other risk factors among some 800 arrested offenders, those who felt they were not treated in a procedurally fair and polite manner were 60 percent more likely to commit a reported act of domestic violence in the future (fig. 2). This finding suggests three ways



to push research into practice: 1) change the guidelines for making domestic violence arrests to include those elements that would enable offenders to perceive more “procedural justice”; 2) hold police accountable for using these guidelines by comparing rates of repeat victimization associated with different police units; and 3) compute these rates using statistical adjustments for the pre-existing level of recidivism risks.

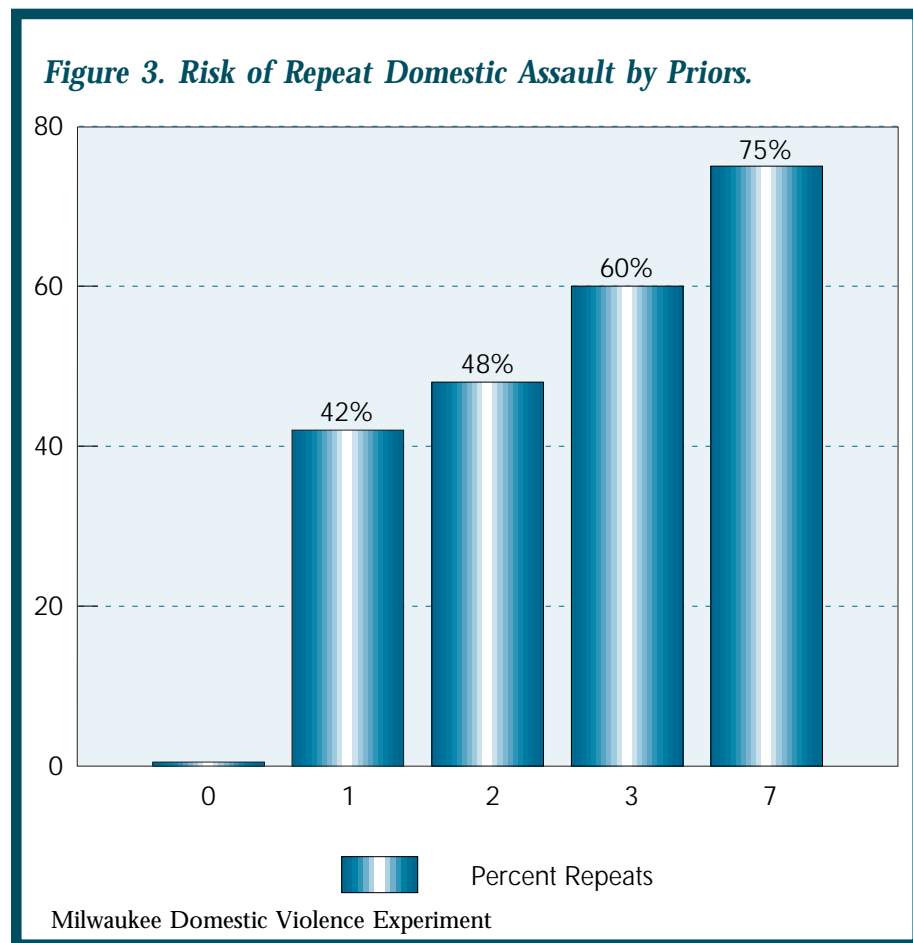
The NIJ research provides other evidence for ways that police can reduce repeat offending in misdemeanor domestic violence. Rather than a one-size-fits-all policy, the evidence suggests specific guidelines to be used under different conditions. Offenders who are absent when police arrive—as they are in some 40 percent of cases—respond more effectively to arrest warrants than offenders who are arrested on the scene (Dunford 1990). Offenders who are employed are deterred by arrest, while offenders who are unemployed generally increase their offending more if they are arrested than if they are handled in some other fashion (Pate and Hamilton 1992; Berk et al. 1992; Sherman and Smith 1992). Offenders who live in urban areas of concentrated poverty commit more repeat offenses if they are arrested than if not, while offenders who live in more affluent areas commit fewer repeat offenses if they are arrested (Marciniak 1994). All of these

findings could be changed by further research, but for the moment they are the best evidence available.

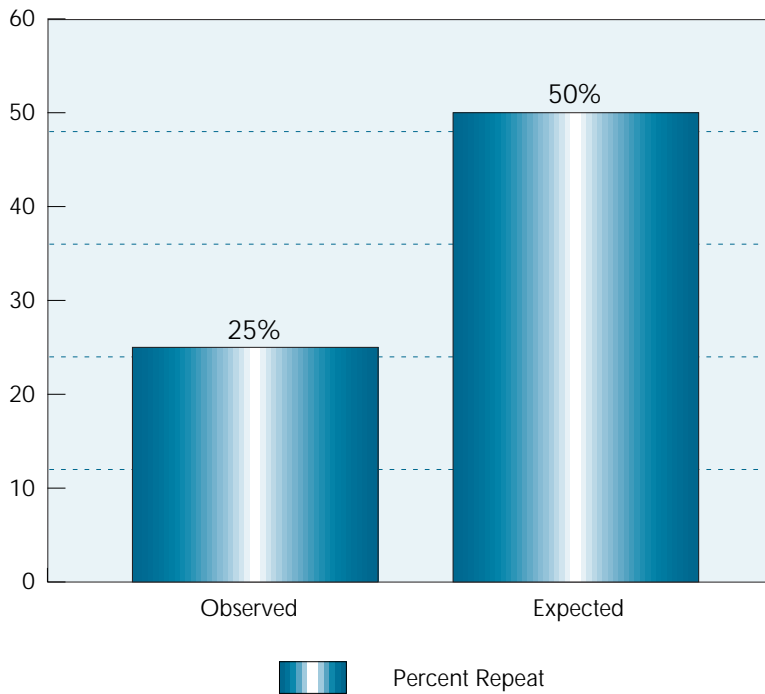
This research evidence could support guidelines for policing domestic violence that differed by neighborhood and absence or presence of the offender. It could also support guidelines about listening to suspects’ side of the story before making arrest decisions and generally treating suspects with courtesy. Other evidence, such as the extremely high-risk period for repeat victimization in the first days and weeks after the last police encounter (Strang and Sherman

1996), could be used to fashion new problem-oriented strategies. Most important, the existing research can be used to create a fair system for evaluating police performance on the basis of risk-adjusted outcomes. That evidence (fig. 3) shows that the likelihood of a repeat offense is strongly linked to the number of previous offenses each offender has.

Once the risk of repeat offending can be predicted with reasonable accuracy, it becomes possible to use those predictions as a benchmark for police performance. Just as in the bypass surgery death rates in New York, the outcomes of policing can be



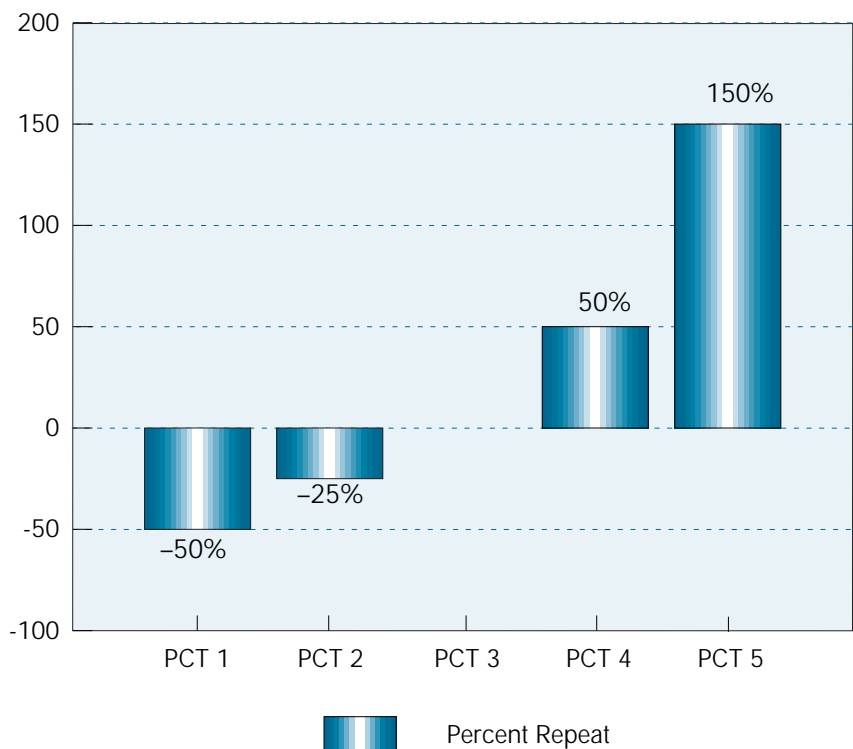
**Figure 4. Observed vs. Expected Risk of Repeat Domestic Violence.**



By constructing information systems for this kind of outcome research, police departments can focus on an objective that has only previously been measured in major experiments. Making the goal of policing each domestic assault the *outcome* of a reduced repeat offending rate rather than the *output* of whether an arrest is made would have several effects. One is that crime prevention would get greater attention than retribution for its own sake. While not everyone would welcome that, it is consistent with at least some police leaders' view of the purpose of the police as a crime prevention agency (Bratton with Knobler 1998). Another effect would be to seek out and

controlled for the risk level inherent in the caseload they face. Using a citywide database of all domestic assaults, now running over ten thousand cases per year in cities like Milwaukee, a model can be constructed to assess the risk of repeat offending in each case. The overall mix of cases in each police precinct or for each officer can generate an average risk level for that caseload. Each police patrol district can then be evaluated according to the actual versus predicted rate of repeat offending each year (fig. 4). All patrol districts in the city can then be compared on the basis of their relative percentage difference between expected and actual rates of repeat domestic assault (fig. 5).

**Figure 5. Observed vs. Expected Ranking by Precinct.**



*The strongest claim about evidence-based policing is that it contains the principles of its own implementation.*

even initiate more research on what works best to prevent domestic violence. In the world as we now know it, no one in policing—from the police chief to the rookie officer—has any direct incentive to reduce repeat offending against known victims. No one in policing is held accountable for accomplishing, or even measuring, that objective. As a result, no one knows whether repeat victimization rates get better or worse from year to year. Using outcomes evidence to evaluate performance would make police practices far more victim-centered, the top priority being that of preventing any further assaults.

***How can it be institutionalized?***

The strongest claim about evidence-based policing is that it contains the principles of its own implementation. The principles of using evidence both to change and evaluate practice can be applied to a broad institutional analysis of implementation. Thus while the changes described

above would have to occur one police agency at a time, there are certain national forces that can help start the ball rolling. This can be seen, for example, in national rankings of big-city police agencies, as well as national mandates for improving police data systems to provide better evidence. Yet even such external pressures will not succeed without internal evidence cops to import, apply, and create research evidence.

No institution is likely to increase voluntarily its accountability except under strong external pressure. It is unlikely that evidence-based policing could be adopted by a police executive simply because it appears to be a good idea. The history of evidence-based medicine and education strongly suggests that professionals will only make such changes under external coercion. Nothing seems to foster such pressure as much as performance rankings across agencies (Millenson 1997; Steinberg 1998). Just as various public performance measures

allow stockbrokers to rank publicly-held corporations and provide those companies with strong incentives for better results, public information about police performance would create the strongest pressure for improvement.<sup>3</sup>

One example of how the major city police departments could be ranked on performance can be found in their homicide rates, which already receive extensive publicity. What these statistics lack, however, is any scientific analysis of expected risk. Police performance has nothing to do, at least in the short run, with the social, economic, demographic, and drug market forces that help shape a city's homicide rate. While police performance may also affect those homicide rates, the other factors must be taken into account. Using risk-adjusted homicide rates provides one indication of how well a police department may be doing things like confiscating illegal weapons, patrolling hot spots, regulating violent taverns and drug markets, and monitoring youth gangs. While the basic research literature would increasingly provide a source of guidance for taking initiatives against homicide, a

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<sup>3</sup> The 1919 results of the first national rankings of hospitals were deemed so threatening that the American College of Surgeons decided to burn the report immediately in the furnace of New York's Waldorf-Astoria Hotel (Millenson 1997, 146).



risk-adjusted outcomes analysis (fig. 6) would indicate how well that research had been put into practice.<sup>4</sup>

If a credible national research organization would produce such “league rankings” among big-city police departments each year (like the *U.S. News & World Report* rankings of colleges and universities), the predictable result in the short term would be attacks on the methodology used. That is, in fact, what continues to go on in New York with the death rates in surgery. But the New York rankings have spread to other states, and consumers have found them quite valuable. Doctors—and police—may also find rankings very valuable in the long run. Both professions should enjoy greater public respect as they get better at producing the results their consumers want.

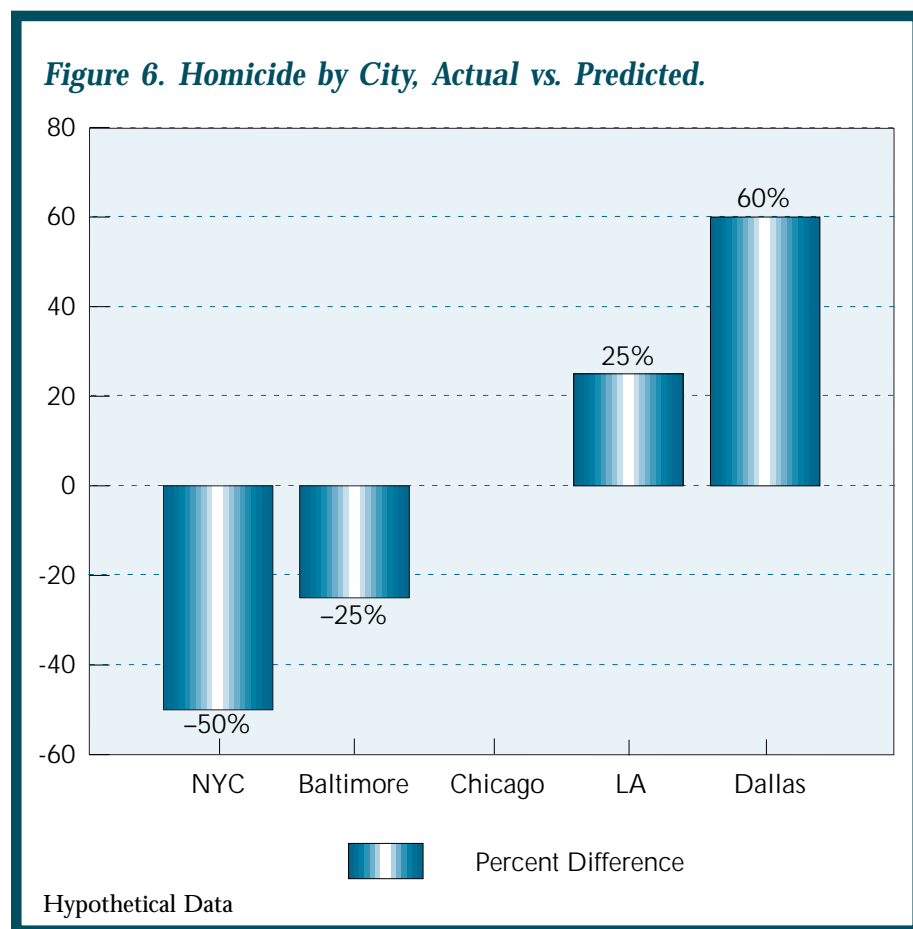
The more seriously performance indicators influence the fate of organizations, the more likely they are to be subverted. Recent examples include the U.S. Postal Service in West Virginia, where an elaborate scheme to defeat the on-time mail delivery audit was recently

alleged (McAllister 1998). Other examples include teachers helping students to cheat on their answers to national achievement tests and, of course, police departments under-reporting crime. The New York City police have removed three commanders in the past five years for improperly counting crime to make their performance look better (Kocieniewski 1998), and several chiefs of police elsewhere have been convicted on criminal charges for similar conduct.

Quite apart from pressures to corrupt data, criminologists have long known that police crime reporting is not reliable, with the

possible exception of homicide. No two agencies classify crime the same way. The same event may be called an aggravated assault in one agency and a “miscellaneous incident” in another. The recent FBI decision to drop Philadelphia from the national crime reporting program was not an isolated action. In 1988, the FBI quietly dropped the entire states of Florida and Kentucky. Since the FBI lacks resources to do on-site audits in each police agency every year, these examples are just the tip of a very big iceberg. There are already rising suspicions of police manipulation of crime data as

<sup>4</sup> While many of the basic risk factors would be computed from Census data that could be out of date by the middle of each decade, other risk data can be derived from annually updated sources, such as the NIJ ADAM data on drug abuse among arrestees. Unemployment, school dropout, teen childbirth, and infant mortality data are also available annually for each city and could help predict the expected rate of homicide.





crime rates fall in many cities. More serious pressure from national rankings would threaten data integrity even more.

One viable solution to this problem is a federal requirement for police departments to retain CPA firms to produce annual audits of their reported crime data. This requirement could be imposed as a condition for receiving federal funds, just as many other federal mandates have already done. Anticipating court challenges about unfunded mandates (such as the Brady Bill), Congress could also provide funds to pay for the audits. Crime counting standards could be set nationally by the accounting profession in collaboration with the FBI. Alternatively, each state legislature could require (or even fund) these audits as a means of assuring fairness in performance rankings of police departments within the state. State agencies such as the criminal justice statistical centers could also produce such rankings as a service to taxpayers. States already have the option of spending federal funds on such a purpose under the broad category of evaluation funds.

In the process of revitalizing crime data integrity, there would be great value in reorganizing police data systems. Most important would be the creation of a “medical chart” for each crime victim. Like computerized patient records, this chart would show the diagnosis (offense

*In the process of revitalizing crime data integrity, there would be great value in reorganizing police data systems.*

description) for each incident a victim presents to a police agency, perhaps anywhere in the state. The chart would also show what police did in response, everything from taking an offense report to arresting an offender whose release date from prison is also kept, updated, in the computerized victim chart. This information tool could help develop many proactive police methods for preventing repeat victimization. Allowing officers to use these data to keep their own private “batting averages” for repeat victimization (even without adjusting for risk) may encourage them to become involved and committed to doing a better job at preventing crime.

Better records are also needed about what police do about crime according to certain patterns of offenses. “Medical charts” for violent taverns, frequently robbed convenience stores, and other hot spots where most crime occurs would be very useful for ongoing problem-oriented policing

attempts to reduce repeat offending at those places. Similar records could be kept about a pattern of crimes spread out across a wider area, such as automatic teller machine robberies. If officer teams or units identify these places or patterns as crime targets and designate a control group, these medical charts can become the basis for estimating how much crime each police unit has prevented.

Computers can also help police officers to implement practice guidelines. Medical computer systems now offer recommended practice guidelines in response to a checklist of data, as well as warning when drug prescriptions fall outside programmed parameters of disease type and dosage. The use of hand-held computers to advise officers in the field and to provide instant quality control checks may not happen soon, but the growth of police research may make it inevitable in the long run. Doctors are not expected to keep

large amounts of research data in their heads, nor even medical guidelines for each diagnosis. Computers will not replace good judgment, but they can clearly enhance it.

Federal rules could also require police departments to appoint a certified police criminologist (either internally or in partnership with a university or research organization), who would become the agency's evidence cop. Like Scott Weingarten of Cedars-Sinai, the departmental criminologist would be responsible for putting research into practice, then evaluating the results. Whether the criminologist is actually an employee or a university professor working in partnership with the police may not matter as much as the role itself. The criminologist could help develop more effective guidelines for preventing repeat offending, and could develop expected versus actual repeat offending data by offense type for each police district or detective unit. A criminologist could add the scientific method to the NYPD Compstat process (Bratton with Knobler 1998), providing statistics at each meeting on each patrol district's crime trends and patterns (or even its complaints against police officers) in relation to the district's risk level. Building the capacity to import, apply, and create evidence within each police agency may be an essential ingredient in the success of this paradigm.

We may also find that the traditional distance between researchers and police officials shrinks when researchers provide more immediate managerial information. Criminologists have long refused to provide police managers with data on particular officers, deeming it contrary to the ethics of basic research (Hartnett 1998). By finally providing the data in a scientifically reasonable format, criminologists may become far more effective at pushing research into practice.

Criminologists can also act on the finding that doctors tend to change practices based on personal interaction and repeated computerized feedback, and not from conferences, classes, or written research reports (Millenson 1997, 127-30). Similar findings have been published about the effectiveness of agricultural extension services,

in which university scientists visit farms and show farmers new techniques for improving their crop yields. They echo a Chinese proverb: Tell me and I will forget; show me and I will remember; involve me and I will understand.

The one test of this principle in policing to date is Alex Weiss's (1997) research on how police departments adopt innovations. Based on a national survey of police chiefs and their top aides, Weiss discovered that telephone calls from agency to agency played a vital role in spreading new ideas. While written reports may have supplemented the phone calls, word-of-mouth seems to be the major way in which police innovations are communicated and adopted.

Weiss's study suggests the great importance of gathering more evidence on evidence. The empirical question for research is, what practices work best to change practices? This inherently reflexive posture may lead us to empirical comparisons of the effectiveness of, for example, NIJ conferences, mass mailings of research-in-brief reports, or new one-on-one approaches. One example of the latter would be proactive telephone calls to police agencies around the U.S. made by present or former police officers; callers could be trained by research organizations to describe new research findings. If national consensus guidelines for practice were developed by panels of police executives and

*The empirical question for research is, what practices work best to change practices?*

researchers, the callers could communicate those as well. Other approaches worth testing might include field demonstrations in police technique. This training would not be based on experience, as is the current Field Training Officer system, but rather it would be based on evidence that the method being demonstrated has been proven effective in reducing repeat offending.

## Conclusion

The test of this paradigm's results is not whether it is adopted this year or in twenty years. As Lord Keynes has suggested, the influence of ideas may be far more glacial than volcanic. The pressure for better measures of results is in the spirit of the age, and police cannot long escape it. All this paper does is add one inch to the glacier, so that we can say of policing what Dr. William Mayo of the Mayo Clinic said of his profession almost a century ago: "The glory of medicine is that it is constantly moving forward, that there is always something more to learn."

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## ABOUT THE POLICE FOUNDATION

The Police Foundation is a private, independent, not-for-profit organization dedicated to supporting innovation and improvement in policing through its research, technical assistance, and communications programs. Established in 1970, the foundation has conducted seminal research in police behavior, policy, and procedure, and works to transfer to local agencies the best new information about practices for dealing effectively with a range of important police operational and administrative concerns. Motivating all of the foundation's efforts is the goal of efficient, humane policing that operates within the framework of democratic principles and the highest ideals of the nation.

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# The Use of Patrol and Problem-Solving at Crime Hot Spots: A Review of the Evidence

Christopher Koper  
George Mason University

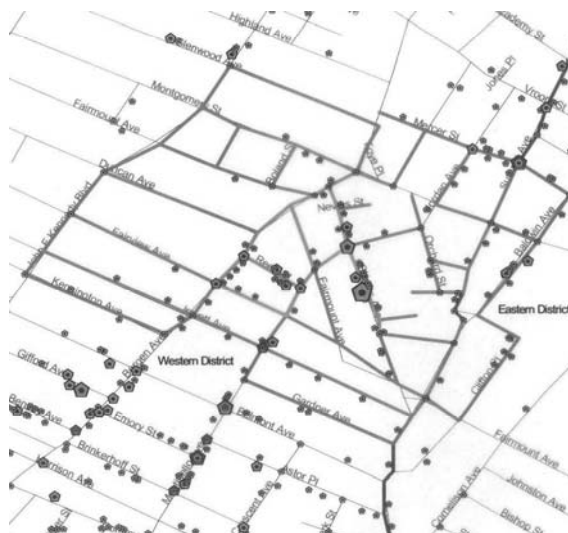
Presented at the Evidence-Based Policing Workshop  
held by the Center for Evidence-Based Crime Policy  
August 2011

Department of Criminology, Law and Society  
George Mason University

## Crime Concentration and “Hot Spots”

- ▶ Half of crime occurs at 5% or less of street blocks and addresses

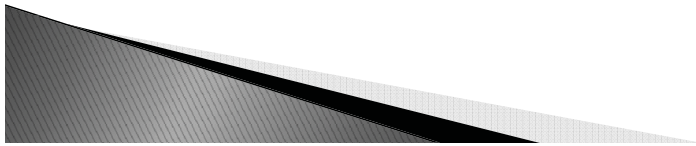
(e.g., Sherman et al., 1989;  
Weisburd et al., 2004)





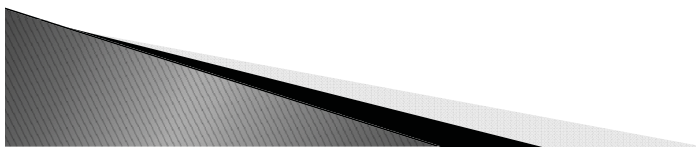
## Hot Spot Places

- ▶ Offenders, targets, absence of guardianship converge
- ▶ Places with facilities and features putting them at higher risk
- ▶ Examples: bars, convenience stores, parks, bus depots, apartment buildings, adult businesses, etc.



## Advantages to Focusing on Hot Spots

- ▶ Concentrate on places where crime is most likely
- ▶ Generate more visible presence and greater perceptual effects
- ▶ Easier to change conditions that contribute to crime
  - Situational crime prevention
  - Working with place managers or “guardians”



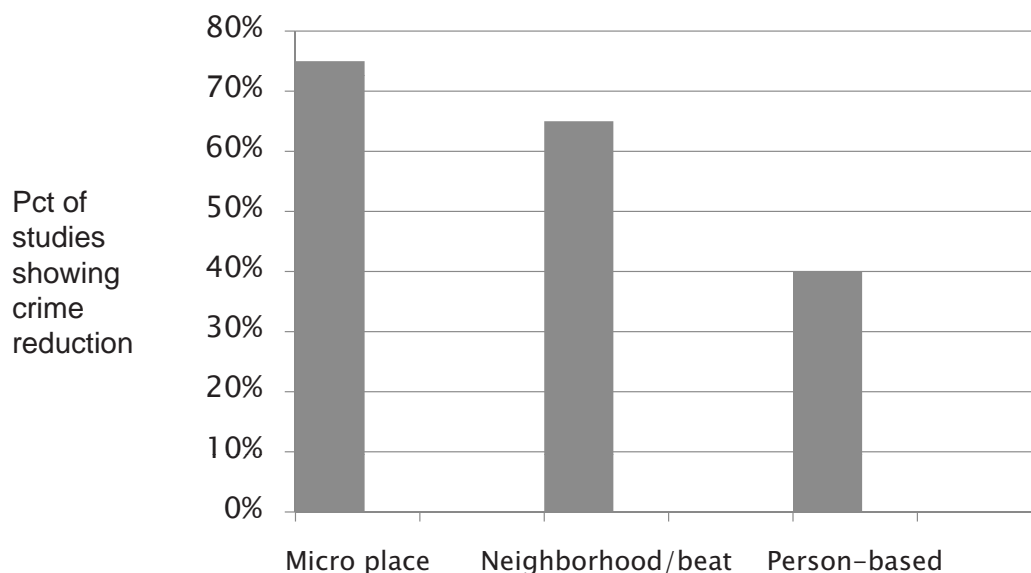


## Studies Indicate Hot Spots Policing Reduces Crime

- ▶ Braga review of 9 rigorous studies focused on hot spot “places”
  - Strategies included directed patrol, crackdowns, problem-solving
  - Crime reductions in 7 of 9 studies
  - No obvious signs of displacement
    - Some diffusion of benefits to nearby areas

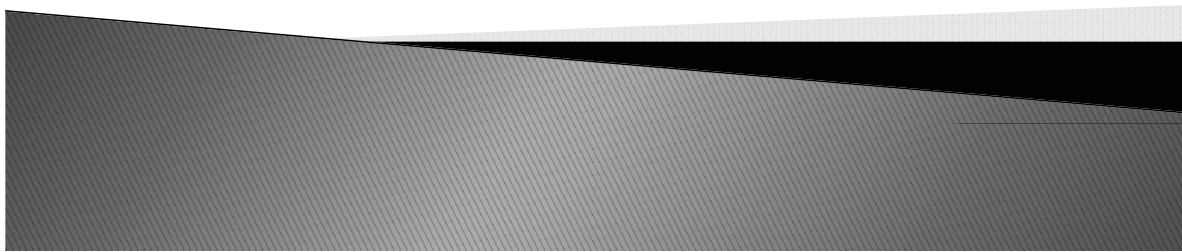
Source: Braga review for Campbell Collaboration (2007)

## Hot Spots Policing Strategies are More Successful than Other Police Strategies



From Lum, Koper, and Telep's Evidence-Based Policing Matrix:  
(<http://gemini.gmu.edu/cebcp/matrix.html>)

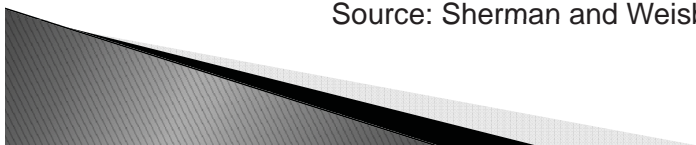
# What strategies should police use at hot spots?



## Directed Patrol at Hot Spots

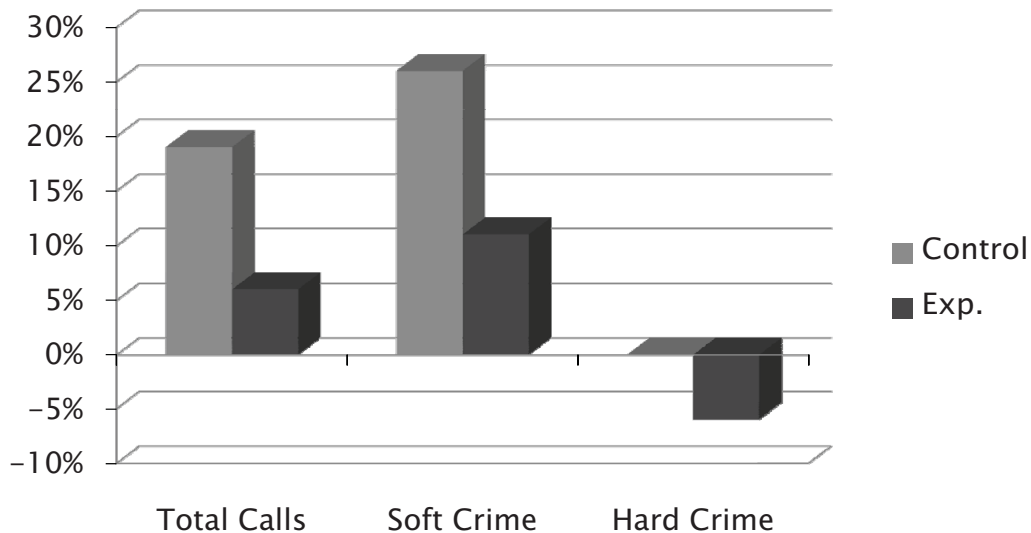
- ▶ Minneapolis Hot Spots Experiment
  - Based on 110 hot spots
    - Address clusters with 20+ calls for “hard” crime per year
    - Accounted for 11% of all calls
    - Places where crime occurred in public
  - Increased patrol presence at 55 randomly selected hot spots—intensified, intermittent patrol
    - 2–3 hours per day

Source: Sherman and Weisburd (Justice Quarterly, 1995)



## Experimental Hot Spots Improved Relative to Control Hot Spots

Changes in Crime

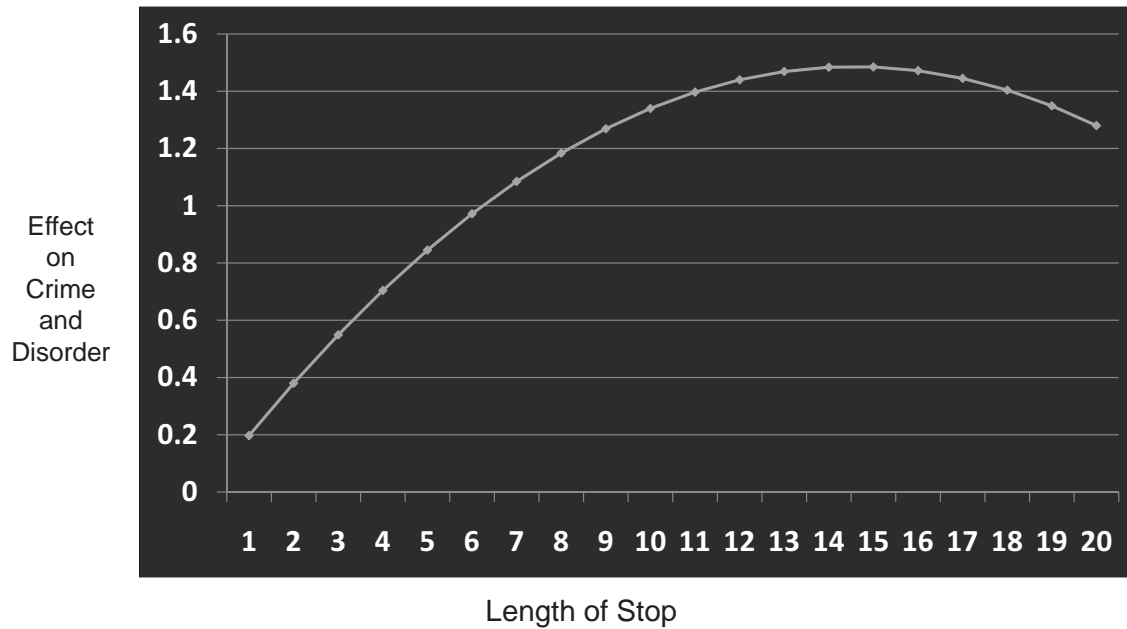


## Optimizing Patrol Time in Hot Spots

- ▶ How often should police stop at a hot spot?
- ▶ How long should police remain each time?
  - Do longer “dosages” of presence create greater “residual” effects—longer periods without crime and disorder after police leave?
  - Is there a point of diminishing returns? How long is long enough?
- ▶ How much total time should police spend in a hot spot per day?

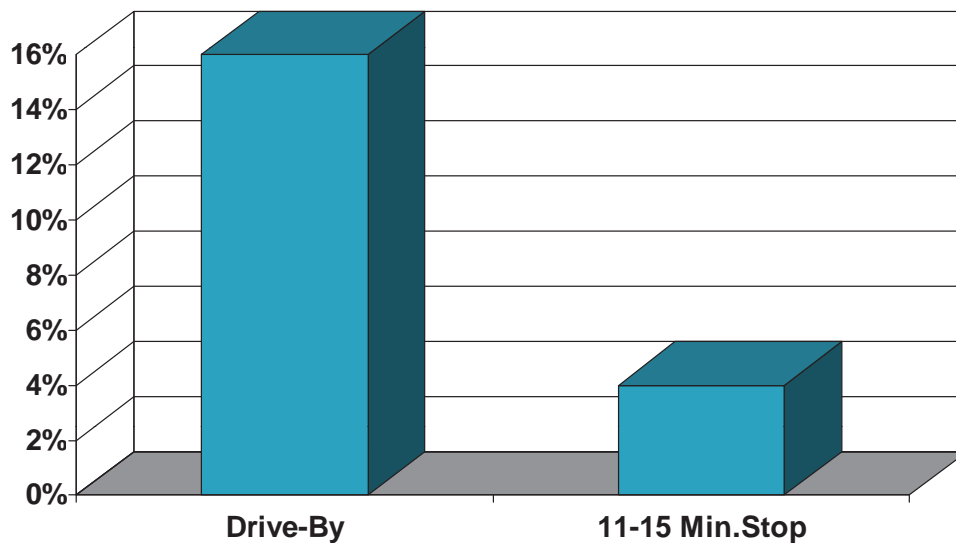


## Effects on Crime and Disorder Maximized by 14-15 Minute Stops



Source: Koper analysis of Minneapolis hot spots data (Justice Quarterly, 1995)

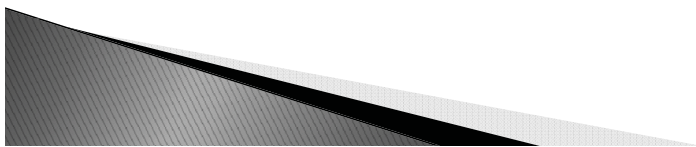
## Likelihood of Crime or Disorder Within 30 Minutes of Police Presence



Source: Koper (Justice Quarterly, 1995)

## Implications

- ▶ Police can maximize deterrent effects of patrol by making proactive 10–15 minute stops at hot spots on random, intermittent basis
- ▶ Reorient patrol around hot spots



## Other Examples of Successful Hot Spots Policing Strategies

- ▶ Directed patrol and investigations in high-crime areas guided by ongoing hot spot analysis
- ▶ Assigning teams to intersection areas for extended order maintenance, situational crime prevention, drug enforcement, clean-up
- ▶ Foot patrol and fixed presence
- ▶ Targeted enforcement in gang hot spots
- ▶ Nuisance abatement and code enforcement at problem places
- ▶ *Problem analysis and developing tailored solutions is often common theme*

## Jacksonville Experiment on Problem-Oriented Policing and Saturation Patrol at Hot Spots

- ▶ Randomized hot spots experiment done by PERF and Jacksonville, FL Sheriff's Office (JSO)
- ▶ Testing the effectiveness of problem-solving v. saturation patrol v. normal operation at 83 hot spots of violence

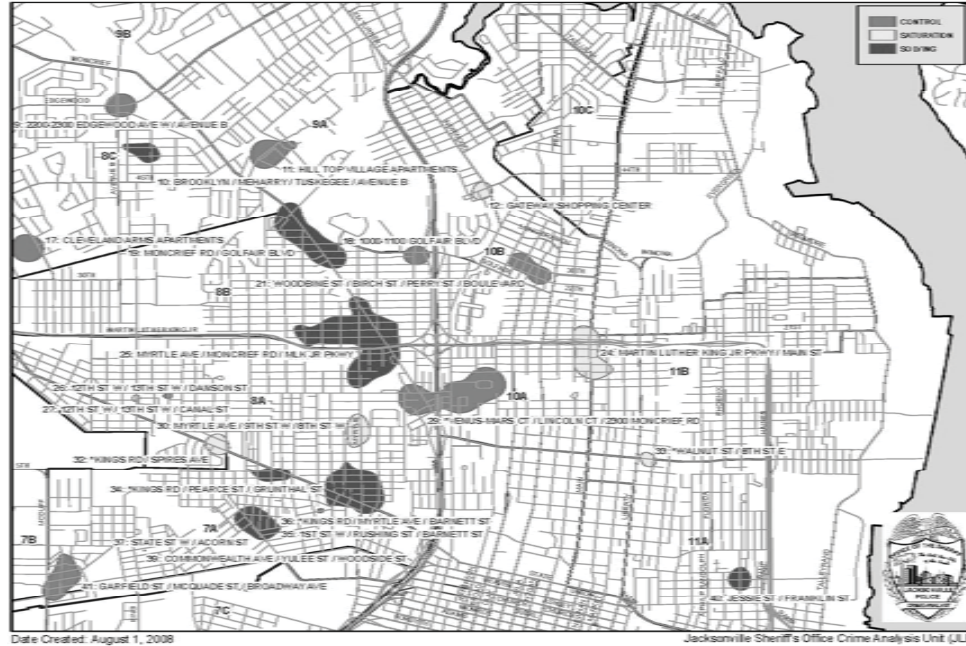
Source: Taylor, Koper, and Woods (Journal of Experimental Criminology, 2011)

## Hot Spot Identification

- ▶ 83 hot spots identified based on non-domestic violence, 2006-May 2008
  - Average size of 0.02 square miles
  - Average of 26 violent street crimes per year (serious and minor)
  - Variety of locations: problem intersections and blocks, apartments, stores, hotels, bars and entertainment



# View of Selected Hot Spots

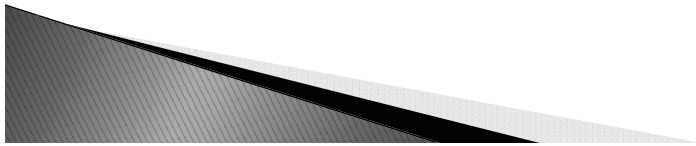


## Experimental Conditions (90-day trial: Jan. 11–Apr. 11, 2009)

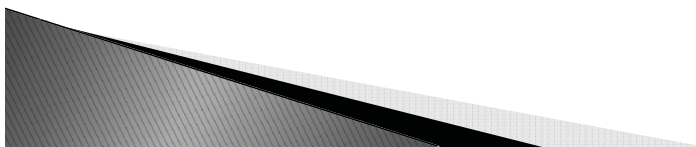
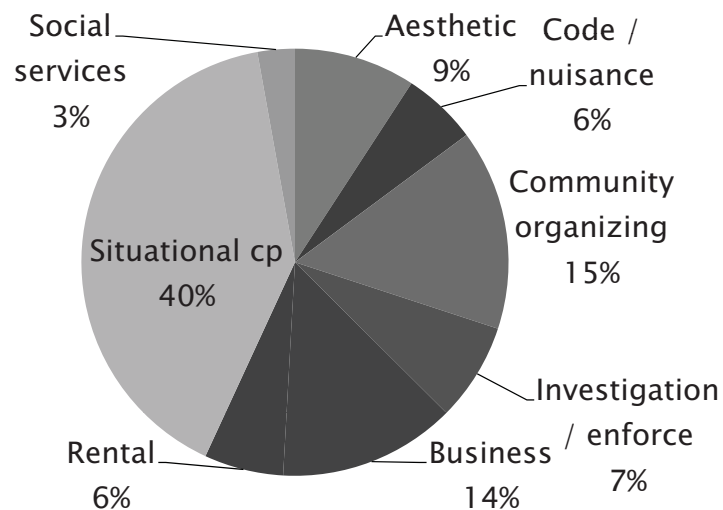
- ▶ 22 Problem-oriented policing (POP) hot spots
- ▶ 21 Saturation patrol hot spots
- ▶ 40 Control hot spots (normal operations)

## Problem-Oriented Policing Intervention

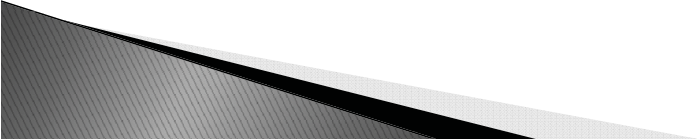
- ▶ Team of officers and crime analyst assigned to each spot
  - 60 officers and 4 crime analysts assigned across 22 hot spots
  - Trained in POP and intelligence-led policing
- ▶ Address underlying factors; leverage community partners; employ response; assess results



## Problem-Solving Activities



## Saturation Patrol Intervention

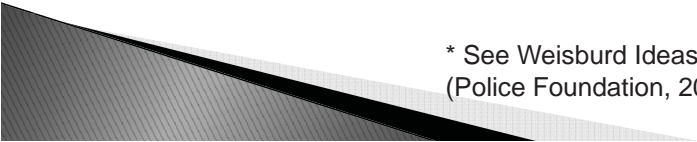
- ▶ On duty and overtime officers
  - ▶ Deployed at high-risk times
    - Pairs of officers working 1–3 hot spots
    - Officer-hours averaged 53 per week (per spot)
  - ▶ Patrol, door to door contacts, investigation (traffic stops, pedestrian checks, etc.)
    - 191% increase in self-initiated activities
    - 85% increase in field interviews
- 

## Summary of Jacksonville Results

- ▶ Saturation may have reduced violence 4% to 20% but effects decayed quickly
- ▶ Problem-oriented policing reduced violence up to 33%
  - Larger and more lasting effects
    - More crimes prevented per officer-hour based on incident reports
  - Nuisance abatement/code enforcement, targeted investigation, and situational crime prevention most effective (preliminary—ongoing analysis)
  - Caveat: Indications of some displacement or reporting increases in nearby locations

# Implementing Hot Spots Policing

- ▶ Need geographic crime analysis based on both recent and long-term patterns
- ▶ Reorient patrol to hot spots (problem blocks, intersections, places)
  - Use 15 minute stops
- ▶ Use problem-solving at hot spots for larger and longer-term crime reductions
  - Short and long-term responses
  - Multi-agency
- ▶ Collect better data on places\*)




\* See Weisburd Ideas in American Policing paper  
(Police Foundation, 2008)

**See the Evidence-Based Policing  
Matrix for additional studies of hot  
spots policing**

<http://gemini.gmu.edu/cebcp/matrix.html>





## Crime Reduction Areas: Hotspots in Alexandria

Deputy Chief Hassan Aden  
Alexandria (VA) Police Department  
Center for Evidence Based Crime Policy  
August 15-16, 2011

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## City of Alexandria, Virginia

- ▶ Population- 148,000
- ▶ Size – 16 square miles
- ▶ 190 officers assigned to Patrol Operations Bureau



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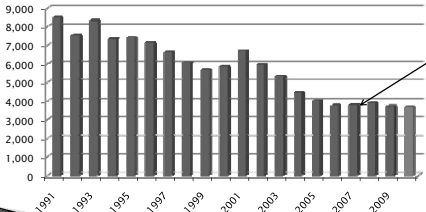
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## Part 1 Offenses

- ▶ 3,669 Part 1 offenses
- ▶ 2010-Lowest annual total since 1966.



Year	Part 1 Offenses (Approximate)
1991	8,500
1992	7,500
1993	8,500
1994	7,500
1995	7,500
1996	7,500
1997	7,000
1998	6,500
1999	6,000
2000	6,000
2001	6,500
2002	6,000
2003	5,500
2004	5,000
2005	4,500
2006	4,000
2007	4,000
2008	4,000
2009	4,000
2010	3,669



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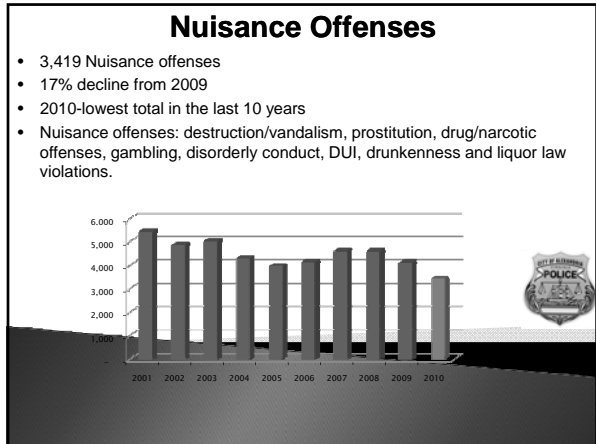
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### Hotspots Policing in Alexandria

Why?

How?

Does the Hotspots approach reduce crime?

Challenges?

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### Hotspots Policing in Alexandria

Why?

- ▶ Strategic Response System (Compstat)
- ▶ Understaffed District serving 90,000 residents
- ▶ 50% of City's Part 1 crime

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### Hotspots Policing in Alexandria

**How?**

- › Koper Curve
- › Trained district officers
- › Dedicated Hotspot officers-no beat responsibility



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### Hotspots Policing in Alexandria

**Does the Hotspots approach reduce crime?**

- › Realized crime reductions in established Hotspots
- › Reversed emerging trends and patterns



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### Hotspots Policing in Alexandria

**Challenges?**

- › Organizational
- › Individual
- › Community



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## Hotspots Policing in Alexandria

- ▶ Micro places critical to crime prevention
- Empirical research suggests crime is concentrated across space even at the micro level of places (Sherman et al 1989, Weisburd et al 2004, Groff et al 2009)
- Focusing police effort in small, high crime areas reduces crime (Braga, 2001, 2007; Eck, 1997; Weisburd & Eck, 2004)

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## Hotspots: Size matters

Crime Analysis Unit:

- Examined Part One crime over the past 3 years
- Determined where the most problematic locations exist
- Did not utilize traditional hotspot density mapping
- Zoomed in on smaller city blocks
- Determined more precise locations using a GIS mapping technique called "fishnet"



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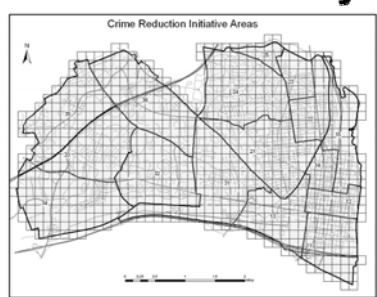
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## Fishnet/Grid Overlay



▶ A fishnet, or grid overlay, was created to split the city into equal areas of 750 square feet.



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## Weight Distribution

- ▶ Each Part 1 crime weighted:
  - Severity of offense
  - Time frame in which it occurred
- ▶ Ensures more value is given to:
  - More serious crimes such as robberies and murders
  - More recent offenses
- ▶ For example:
  - Offense Severity:
    - Homicides scored a 7
    - Rapes scored a 6
    - Robberies scored a 5
  - Time:
    - 5/1/2010 – current scored a 3
    - 5/1/2009 to 4/30/2010 scored a 2
    - 5/1/2008 to 4/30/2010 scored a 1
- ▶ Total score = "offense severity" score x "time" score



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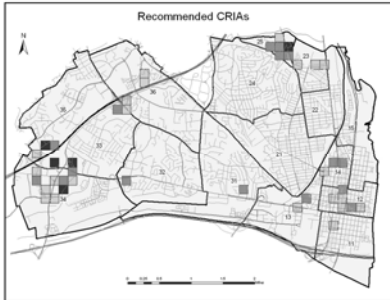
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## Results

- ▶ Top Part 1 quadrants since May 2008, using weighted scores
- ▶ Areas in dark red have the most activity
- ▶ Lighter areas have less activity but are still among the top Part 1 areas over the past 3 years



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# Minneapolis Police Department

## Efforts to Institutionalize Evidence Based Practices

Sgt. Jeff Egge, Crime Analysis Unit



### Minneapolis police focus on 'Hot Spots'

**Plan concentrates on troubled areas**

By Dennis J. McGrath  
Staff Writer

The Minneapolis Police Department will start a program later this year intended to cool down some of the city's high-crime "hot spots."

He, surrounding 100 troublesome locations, police officials hope the year-long Hot Spots crime effort will cut the citywide crime rate. It also will test the question of whether police presence in specific high-crime areas prevents crime or merely displaces it.

"There's a notion cops have that if you suppress crime here, it's going to pop up over there," said Police Chief David R. Johnson.

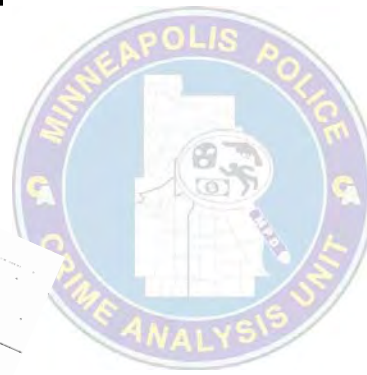
The Minneapolis City Council Friday approved the program, which will be funded with a \$501,000 fee/0,000 from city fund allocations.

It is becoming more important to support the numbers of officers of how the program is being implemented.

Recent studies of Minneapolis crime reports showing that an disproportionate number of police calls come from a small number of addresses.

In 1996, for example, 64 percent of all 911 calls in the city were from 9 percent of all the addresses. In addition, all of the rapes, 80 percent of all robberies and 95 percent of all auto thefts that year occurred at 1 percent of the addresses.

...ed on page 11B



**'Hot spots' cool off when a cop is nearby**

By Mark Brunswick  
Staff Writer

A new study done in Minneapolis showed that parking manned police crime-prone areas was more effective in reducing calls than having unattended police cars.

...said the results could determine how police patrol power is distributed for cities nationwide and whether departments need additional officers.

...Preliminary results, showing that police calls were reduced by 13 percent for experimental hot spots, were announced Tuesday in a report. The report also noted that the patrol numbers for hot spots were reduced by 10 percent.

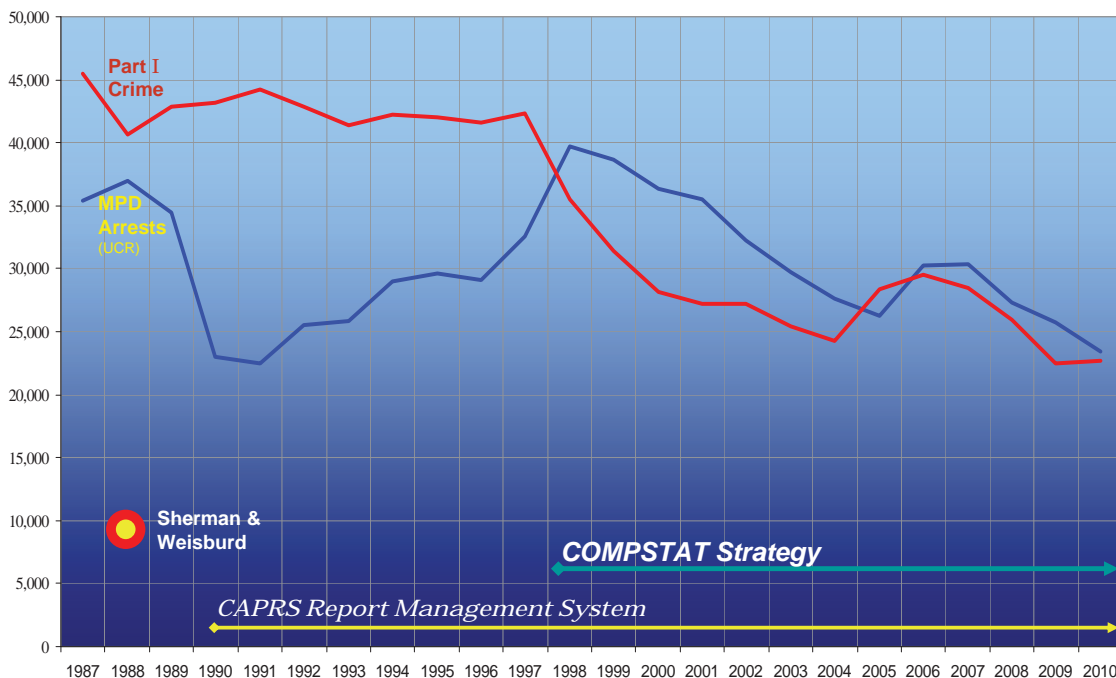
**Criminologist has made Minneapolis a leading crime lab**

By Dennis J. McGrath  
Staff Writer

Since Tony Boura became Police Chief in 1980, Minneapolis has become one of the leading cities in the nation in terms of crime analysis.



## Making Minneapolis a Safer Place- Crime and Arrests 1987-2010

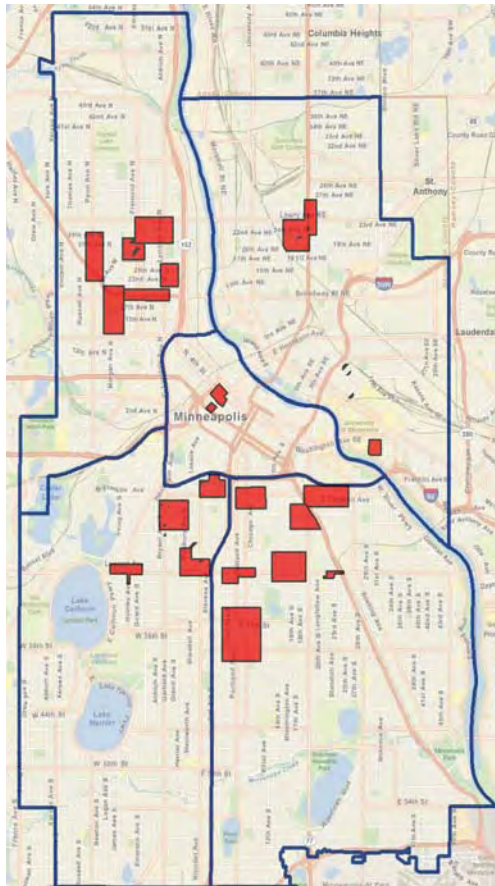
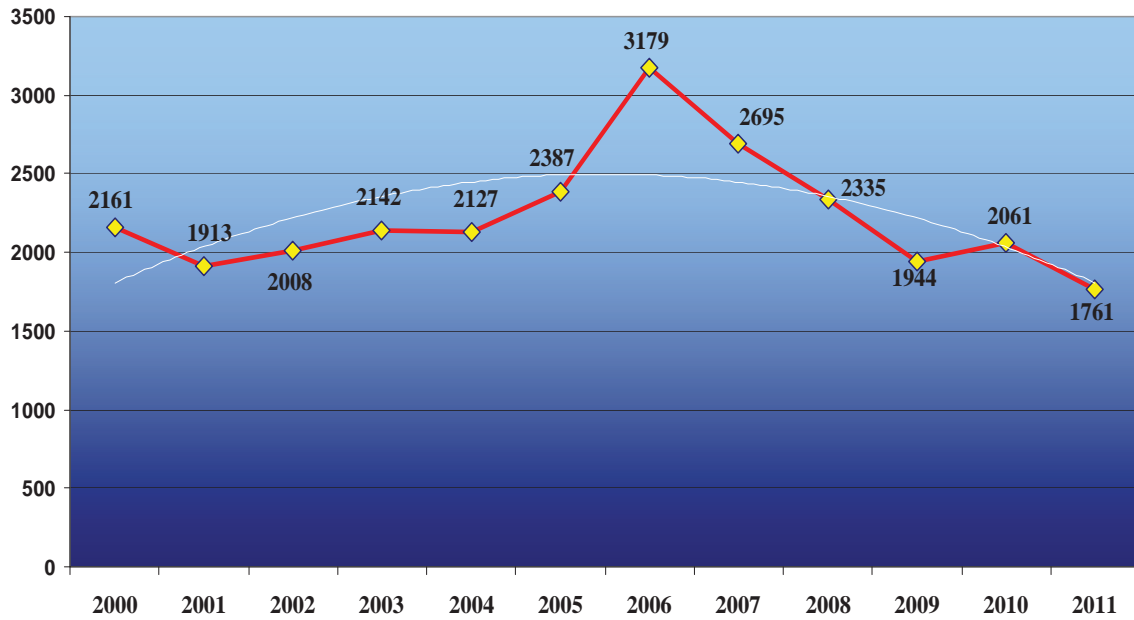


Since the implementation of CODEFOR only one year, (2005) had more Part I Crime than arrests. Staffing levels in 2005 were 794 – 798, the lowest in 22 years.



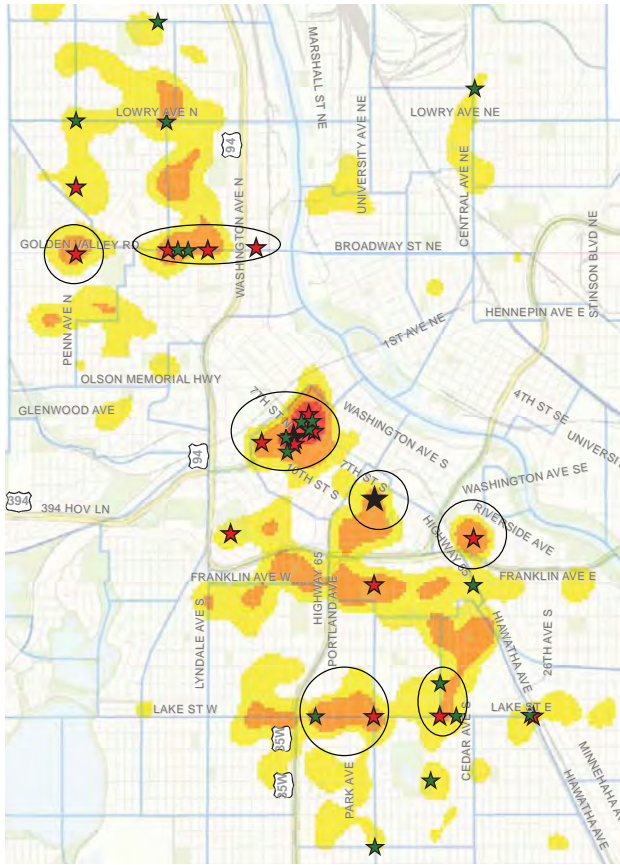
# Minneapolis Violent Crime

## Midyear 2000 - 2011



### Violent Crime Hot Spots at Midyear

- Warehouse District/Block E. -2.8%
- Jackson Square +37.5%
- Peavey Park +37%
- Bloomington & Lake 0%
- 38<sup>th</sup> & Chicago Ave S. -2.6%
- Seward along Franklin -32%
- Little Earth -17%
- Lake Street LRT +240%
- Lake Street Corridor -13%
- North Regional -32%
- Irving Ave N & Emerson +33%
- Lyndale Freeway +200%
- Penn Ave Corridor -40%
- North Commons +42%
- Broadway -4%
- Stevens Square +33%
- South Whittier +94%
- Calhoun Square +50%
- Whittier Park +5.6%



## Relationship of 2010 Summer Violence and Historic Violent Crime Hotspots

\*\*\* Chronic Violent Crime Address 5 years



Summer Violent Crime Clusters



Spatial Relationship between chronic violent crime addresses and 2010 Summer Violence



## MINNEAPOLIS POLICE ~ CRIME ANALYSIS UNIT *Future Oriented Analysis*



### Predictive analysis formula:

Crime triangle (suspect, victim, location/M.O. /commodity X ratio of factors= Prediction

$$\Delta \times X/Y \approx \rho$$

### Reinvigoration of Hot Spots in Minneapolis:

- Collaboration with PERF
- Which algorithm or methodology is best?

### Types of hot spots methodology

- Density
- 1,000 X 1,000 grids
- Street Segments



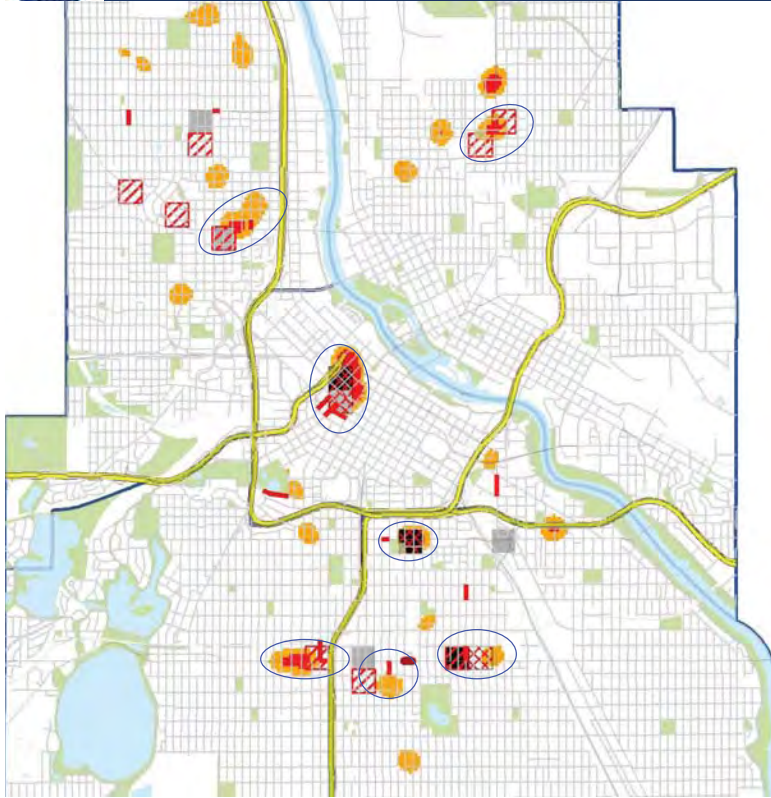
Hot spots are six (6) times more predictable than people



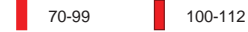


## MINNEAPOLIS POLICE ~ CRIME ANALYSIS UNIT

### Chronic Robbery Hot Spots



10 Year Robbery Hotspot using street segment



2010 Robbery Hotspot using 1000 X 1000 Grid



2011 Midyear Robbery Hotspot using 1000 X 1000 Grid



4-Week Robbery Hotspot using Kernel Density



Chronic Robbery Hot Spot with Stable/Continuing activity



## MINNEAPOLIS POLICE ~ HOT SPOT CRIME MEASUREMENT

### Peavey Park: Part I Crime – Mid-Year (Jan 1<sup>st</sup> – June 30<sup>th</sup>)



Crime Comparison (Jan 1 - June 30)

Peavey Park Hot Spot	2008	2009	2010	2011	1yr % Chg
Homicide	0	0	0	0	#DIV/0!
Rape	4	4	5	3	-40.0%
Aggravated Assaults	8	4	5	9	80.0%
Domestic Assaults	7	4	1	1	0.0%
Robbery	18	9	16	24	50.0%
<b>Violent Crime</b>	<b>37</b>	<b>21</b>	<b>27</b>	<b>37</b>	<b>37.0%</b>
Burglary	10	5	8	8	0.0%
Auto Theft	11	2	7	6	-14.3%
Larceny (Other Theft)	17	23	17	25	47.1%
Theft from Motor Vehicle	12	1	2	7	250.0%
Property Crime	50	31	34	46	35.3%
Part I Crime	87	52	61	83	36.1%
Total Arrests (All)	574	515	424	634	49.5%

- Enforcement Plan: Patrol, Corrections, Gang, Transit, Park, Traffic, K-9, Marshalls, County: 14:00-02:00

- Problem Properties
- Geographic Trespassing
- Lighting
- Cameras

### Take Back Peavey Park

July 26th  
3:45 – 5:15 PM  
Lutheran Social Services  
(2400 Park Ave.)

Join 3<sup>rd</sup> Precinct Commander, Inspector Lucy Gerold, for a discussion about taking back Peavey Park.

- Police Response/Plan
- COMMUNITY'S ROLE IN TAKING BACK PEAVEY
- Planning for daily use of the park
- Identify other issues that need to be addressed
- Adjourn

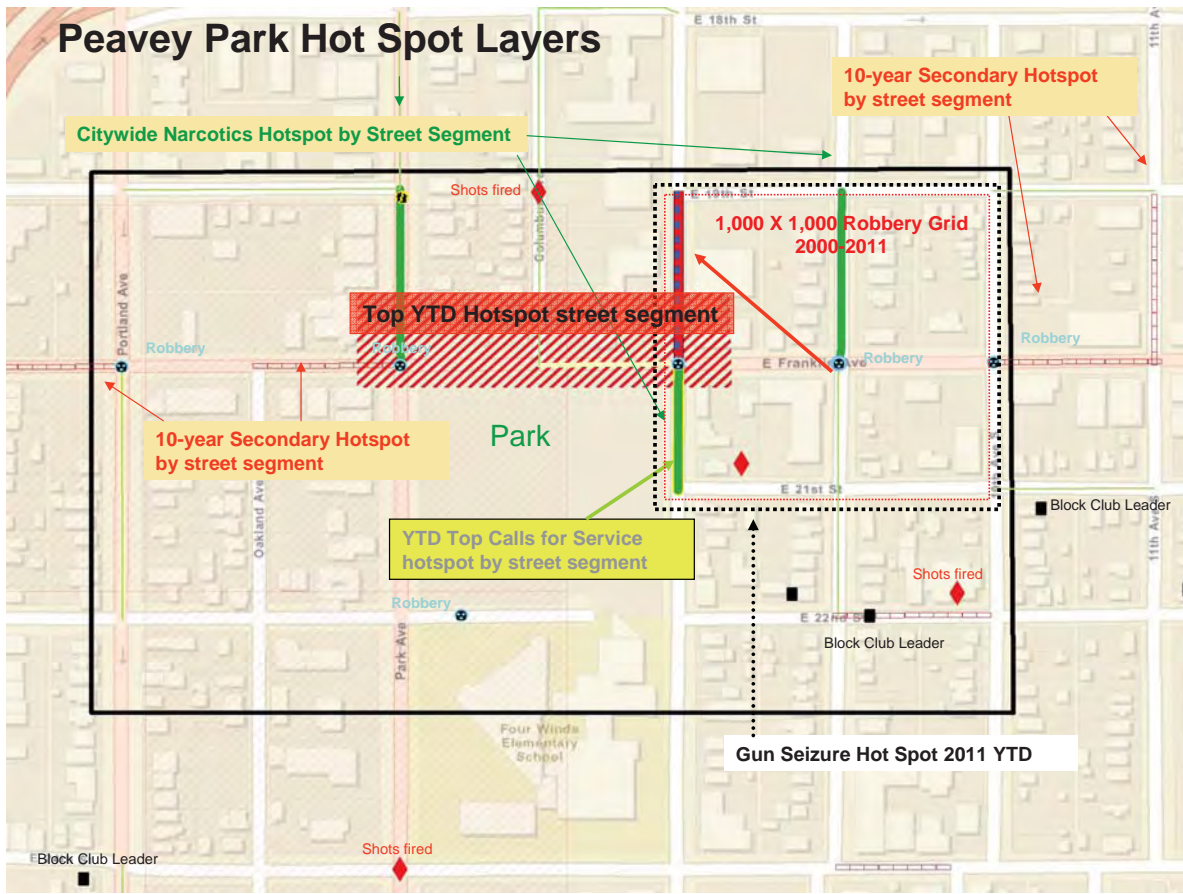
Questions: Contact CPS Don Greeley at 675-3482 or donald.greeley@ci.mn.us

The police department cannot do this alone. We need your help! Become part of the solution for taking the park back.

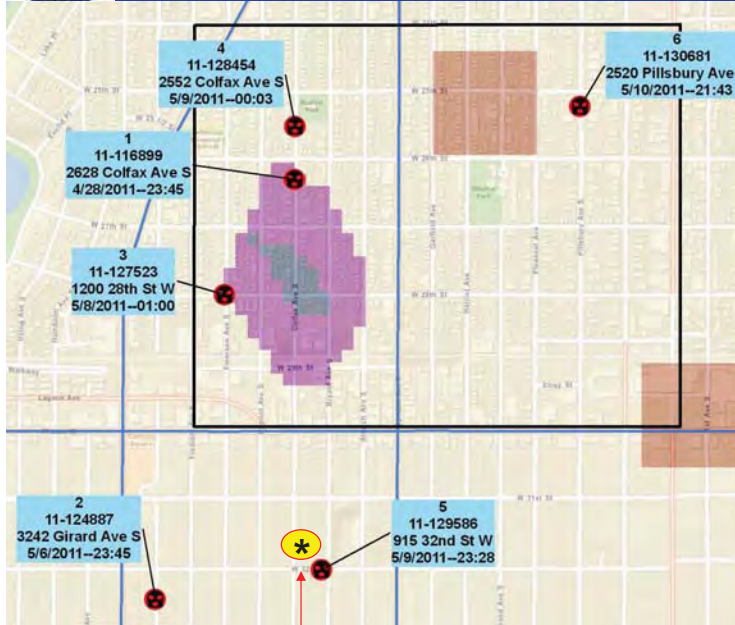


Community

# Peavey Park Hot Spot Layers



## MINNEAPOLIS POLICE ~ CRIME ANALYSIS UNIT Uptown - Assault Robberies



### Robberies in Uptown Area:

6 Robberies have occurred since 4/28/11 that are possible related.

M.O. Suspects approach victim from either front or back and beat the victims up, in one incident the suspects possible used brass knuckles, after victims are down on the ground the suspects take personal belongings.

Suspects: Groups of men, possibly Hispanic, 5'6 – 6'00, 25-35 yoa

Vehicle: White Van was seeing in one, and Tan/Beige 4-door sedan was seen in most recent robbery.

Day: There has been a robbery almost every 24 hours since 5/6/2011.  
Time: 21:30 – 01:00 hours

- Robbery Person
- Probability Grid
- Year-to-Date Robbery Hot
- Suspect Info From Traffic Stop 23:03

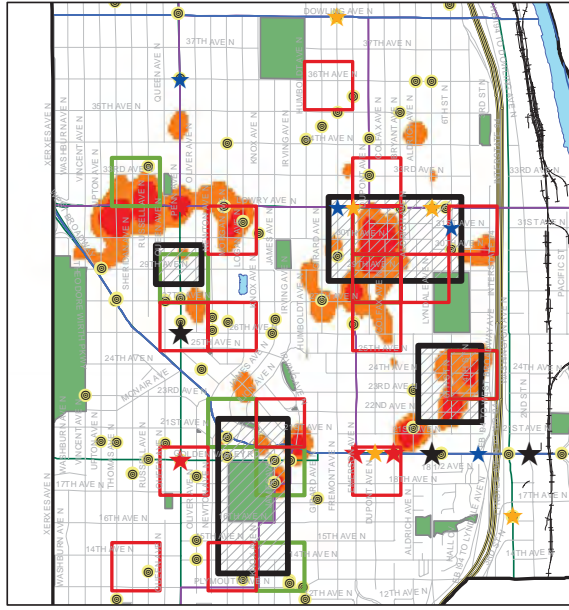
Most recent robbery: 5/10/2011 at 2520 Pillsbury Ave S, Victim fired 3 shots at the suspects





# Minneapolis Police Department - Crime Analysis Unit

## 4th Precinct Shootings, Shot Spotter, & Weapons Seized

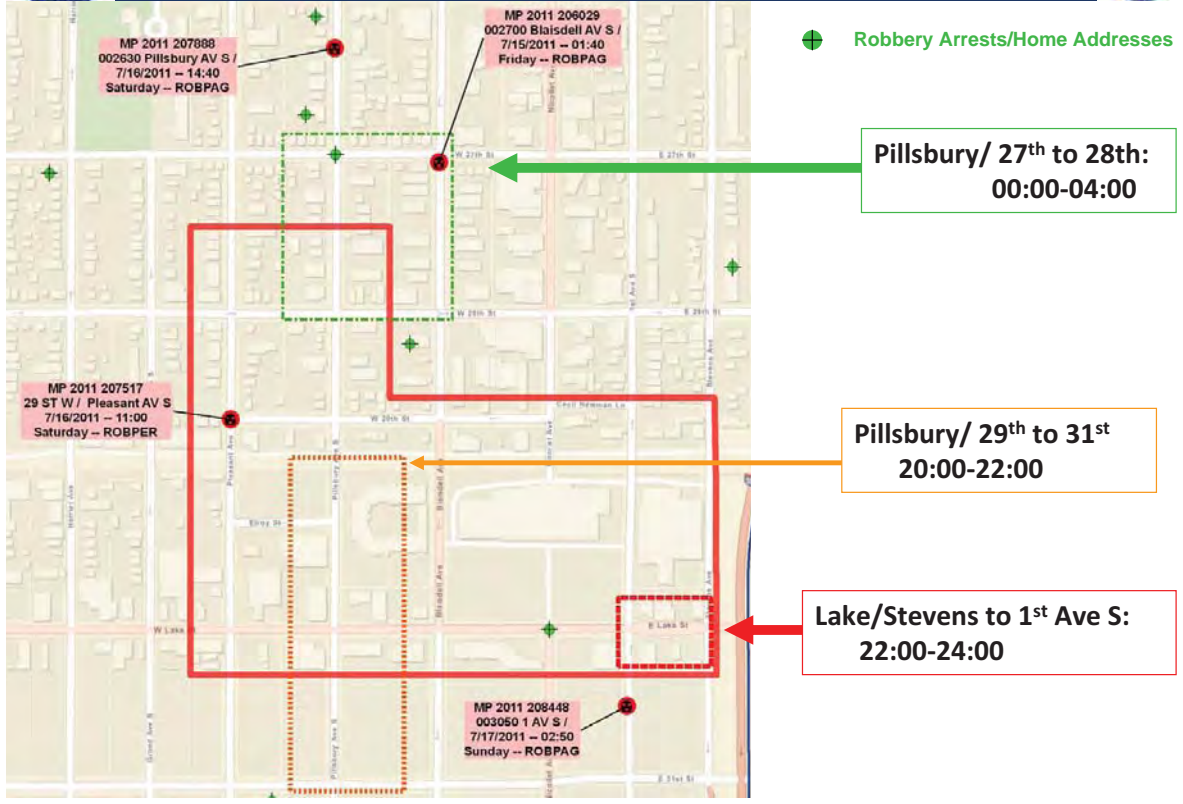


Four areas of concentrated weapons offenses based on persons shot or shot at, guns seized, and Shot Spotter activations in the area.

-  5 Year Shot Spotter Hotspots
-  Gun seized and People Shot Hotspots
-  2010 Shots Fired
-  2010 People Shot
-  Predicted Weapons Hotspot
-  MPD Top 20- Five Year Violent Crime Address



## MINNEAPOLIS POLICE ~ ACTIONABLE ANALYSIS "Guided Missile" Map in Robbery Hot Spot



 Robbery Arrests/Home Addresses

Pillsbury/ 27<sup>th</sup> to 28<sup>th</sup>:  
00:00-04:00

Pillsbury/ 29<sup>th</sup> to 31<sup>st</sup>  
20:00-22:00

Lake/Stevens to 1<sup>st</sup> Ave S:  
22:00-24:00



MINNEAPOLIS POLICE ~ FIRST PRECINCT  
COMSTAT Hot Spot Problem Solving: *Warehouse District*



<i>Warehouse District Hotspot</i>	Week 693	Week 694	Week 695	Week 696	Week 697	Week 698	Week 699	Week 700	Week 701	Week 702	Week 703
Aesthetic Improvements											
<b>Code Enforcement</b>											
Community Engagement (COMM)											
Community Organizing											
<b>Investigation</b>											
<b>Nuisance Abatement</b>											
<b>Directed Patrol &amp; Enforcement</b>											
Public/Private Partnerships											
Rental Housing Intervention											
Situational Crime Prevention											
Social Services											

Ongoing resistance: *Outputs v. outcomes*



MINNEAPOLIS POLICE ~ CRIME ANALYSIS UNIT  
Future of Evidence Based Policing in Minneapolis



- Institutionalization via crime analysis and COMPSTAT
- Matrix translation
- Technology investment and testing
- Further understanding and measuring of police dosage
- Determining the impact of quality crime analysis
- Develop models of introducing research into practice.



Sgt. Jeff Egge

(612) 290-2352 [jeffrey.egge@minneapolismn.gov](mailto:jeffrey.egge@minneapolismn.gov)

**GENERAL DETERRENT EFFECTS OF POLICE PATROL IN CRIME HOT SPOTS: A  
RANDOMIZED, CONTROLLED TRIAL  
Lawrence W. Sherman and David Weisburd**

**SUMMARY**

After the Kansas City experiment, researchers and academics placed very little value on the ability of preventative routine patrols to deter crime. However, further examination of the Kansas City Experiment revealed shortcomings in methodology, in particular a statistical bias towards a null hypothesis and a measurement problem in determining the dosage of patrols for a specific area. This randomized controlled experiment addressed these shortcomings by determining the effect of police patrols on very small clusters of high-crime addresses in the city of Minneapolis. This “hot spot” oriented approach indicates that police patrols of sufficient duration can have a moderate deterrent effect on crime.

**DATA AND METHODS**

This study took place in Minneapolis, MN. Selection of hot spots for the experiment began with an examination of data files on all dispatched calls for police service citywide to identify address clusters with 20 or more “hard calls”, or offenses such as holdup alarms, auto theft, assault and rape, and substantial “soft calls”, or offenses such as public drunkenness, disturbances, or fights. Computer mapping of this data revealed 420 address clusters available for study. After visual inspection of hot spots and screening for size, location, and nearness to other hot spots, 110 hot spots were selected for this study and randomly assigned to either the experimental or control group. For the 55 hot spots assigned to the experimental group, officers increased patrol presence to a target duration of 3 hours per day. Patrol logs and independent observation of the targeted hot spots were used to validate the duration of patrol presence per day in each hot spot. The impact of the increased patrol presence was measured by citizen calls concerning crime and independent observations of crime at the selected hot spots.

**FINDINGS**

This study found a clear, if modest, general deterrent effect of substantial increases in police presence in crime hot spots. Although the findings were not sufficient to support a general deterrent effect of police presence throughout the community, they do support a place-specific “micro-deterrence” in the hot spots which received additional patrols.

**IMPORTANCE OF THIS STUDY**

The Sherman and Weisburd study began a series of subsequent studies on hot spot policing which ultimately led to the National Academy of Sciences, National Research Council on the Fairness and Effectiveness of Policing to deem this tactical approach to be one of the most evidence-based approaches that police can take to reduce crime.

# **JUST ENOUGH POLICE PRESENCE: REDUCING CRIME AND DISORDERLY BEHAVIOR BY OPTIMIZING PATROL TIME IN CRIME HOT SPOTS**

**Dr. Christopher S. Koper**

*University of Maryland, College Park*

## **SUMMARY**

This study examines the residual deterrence effects of police patrols in hot spots, or small clusters of high crime addresses. Residual deterrence is an effect of police presence in an area which discourages disorderly and criminal behavior after police depart. This study is based on three concepts suggested by research in this area: (1) that controlling disorderly behavior can reduce fear and more serious crime; (2) that police can reduce disorder and crime by increasing their presence at hot spots where such behavior is concentrated; and (3) that the presence of an officer in a hot spot has the effect of deterring disorderly and criminal behavior even after police depart (for example, by driving troublesome people away from the area). Extrapolating from theory and research on police crackdowns, the study examines whether stronger dosages (i.e., longer instances) of police presence create stronger residual effects on crime and disorder and, if so, whether there is an optimal length for police presences at hot spots (i.e., a point of diminishing returns).

## **DATA AND METHODS**

The study employed observational data collected during the Minneapolis hot spots experiment. Observers visited hot spots at randomly selected times to record police presence, crime, and disorder. The analysis is based on approximately 17,000 observed instances of police presence (blocks of time when at least one officer was present at the hot spot) and 4,000 instances of observed disorderly or criminal behavior. Continuous-time, parametric survival models were employed to determine whether patrol presences of greater duration produced a longer “survival” time—i.e., a longer time without observed criminal or disorderly behavior after the police departed. The analysis focused on drive-bys and stops of up to 20 minutes. The survival time was measured using a follow up period of up to 30 minutes following each police presence.

## **FINDINGS**

For police stops, each additional minute of police presence increased survival time by 23%. The ideal dosage for police presence was 10-15 minutes; a threshold dosage of 10 minutes was necessary to generate significantly more residual deterrence than was generated by driving through a hot spot. Residual deterrence effects were greatest for police presences of 14-15 minutes; longer presences had diminishing effects.

## **IMPLICATIONS FOR POLICY MAKERS**

Police can maximize crime and disorder reduction at hot spots by making proactive, 10-15 minute stops at these locations on a random, intermittent basis, thus maximizing deterrence and minimizing the amount of unnecessary time spent at hot spots. However, the study did not address the types of activities conducted by officers at hot spots.



## A Randomized Controlled Trial of Different Policing Strategies at Hot Spots of Violent Crime in Jacksonville: Executive Summary

By Bruce G. Taylor and Christopher S. Koper (Police Executive Research Forum)

In collaboration with Matt White and Jamie Roush (Jacksonville Sheriff's Office) and Daniel J. Woods (Police Executive Research Forum)

Police interventions focused on “hot spots”—small geographic places or areas where crime is concentrated—have gained widespread acceptance among practitioners and researchers as an effective approach to reducing crime, though ambiguities still exist as to what types of policing strategies work best for hot spots. During 2008 and 2009, the Jacksonville Sheriff's Office (JSO) and the Police Executive Research Forum (PERF) partnered on a project to test the effectiveness of problem-oriented policing and directed-saturation patrol at hot spots as a means of refining JSO's strategies to reduce street violence.

Using data from 2006 through May 2008, JSO crime analysts and PERF researchers identified 83 precisely defined hot spots of non-domestic, street violence in Jacksonville. These “micro” hot spots, which averaged 0.02 square miles in size, consisted of specific addresses, intersections, street blocks, and clusters of street blocks that exhibited high concentrations of violence during the two-and-a-half-year selection period. With PERF's assistance, JSO randomly assigned these hot spots to problem-solving (22 locations), directed-saturation patrol (21 locations), or normal operating (i.e., “control”) conditions (40 locations) for a 90-day experimental period spanning from January 2009 through April 2009.

Problem-solving activities at the first group of locations were conducted by teams of supervisors, officers, and crime analysts who received training (facilitated by PERF) in the principles of problem-oriented and intelligence-led policing. In total, 60 officers and 4 analysts were assigned to this effort. Working in two shifts, they covered their assigned locations on a full-time basis, thus providing coverage seven days a week at each location. The officers and analysts attempted to identify and address the underlying factors driving crime in these locations, working closely with community partners where possible. Officers implemented a wide array of measures at these locations, including situational crime prevention, code enforcement and nuisance abatement, partnerships with business owners and rental property managers, community organizing, improvement of social services, aesthetic improvements, and investigation or enforcement activities.

Locations assigned to the directed-saturation patrol group received additional patrol during high-risk days and times as determined by JSO crime analysts. The patrols were conducted by a mix of on-duty officers and officers on overtime. During the selected days and times, pairs of officers in separate cars worked one to three hot spots at a time (officers assigned to multiple hot spots covered locations in close proximity). On average, the directed-saturation patrol locations received 53 officer-hours of additional patrol per week, leading to significant increases in field stops and other self-initiated activities in these places.

PERF's analysis of the program's impacts, which controlled for pre-intervention levels of violence, seasonal patterns, and selected characteristics of the hot spots, revealed that the problem-oriented policing intervention produced stronger and more lasting effects on violent crime. Although violence declined by up to 20% in the directed-saturation patrol locations during the intervention period, this reduction could not be clearly distinguished from natural variation in crime over time (i.e., the result was not “statistically

significant”), and violence levels rebounded after the intervention. In contrast, the problem-solving locations experienced a statistically significant 33% reduction in officially-reported incidents of street violence during the 90-day period following the intervention, relative to trends in the control (non-intervention) locations. (Total violence and serious property crime also declined to a lesser extent.) This suggests that the problem-solving measures implemented by officers and analysts had taken hold by this time and were producing reductions in crime that may have lasted well beyond the study period.

A caveat to this finding is that calls to police about violence increased in areas within 100 to 500 feet of the problem-solving locations, though this did not lead to an increase in officially-reported incidents of violence. This may indicate that crime was displaced from the target locations to the surrounding areas, or that citizens became more inclined to call police about crime when exposed to the beneficial effects of problem-solving police activities in nearby locations.

In sum, this experiment provides evidence that problem-oriented policing can be an effective strategy for JSO in reducing violence at hot spots—and one that can produce lasting effects—though JSO should be aware of the potential for displacement or reporting effects in nearby areas and monitor these developments accordingly. Assigning officers to micro hot spots for extended saturation patrol, on the other hand, does not appear to be an optimal approach for reducing serious crime. JSO might therefore experiment with other methods of directed patrol such as assigning officers to larger areas and giving them responsibility to conduct periodic stops and activities at multiple hot spots within those areas, thus potentially optimizing patrol time and coverage across numerous hot spots. In the coming months, PERF will be conducting additional analyses of the experimental data to more precisely identify the types and dosages of police activities that were most effective at the hot spots.

**Reforming to Change (and not preserve): What can Compstat and Community Policing Teach us About Integrating Innovations?**

James J. Willis



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**Thinking about reform**

- The “wave” model



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**Compstat as a new “wave”**

- “The New York Police Department (NYPD) Crime Control Model, CompStat, is a vastly *new* approach to managing police operations and, as such, represents a “sea” change in law enforcement (McDonald et al. 2004: 1, italics in original)
- “...perhaps the single most important organizational/administrative innovation during the latter half of the twentieth century” (Kelling and Sousa 2001, p. 2)
- “...an emerging paradigm” (Walsh, 2001)
- *The Evolving Strategy of Policing* (3 eras of policing), Kelling and Moore (1988)

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### What's in a wave?

- Three harmful consequences:
  1. Unrealistic expectations for success
  2. Lack of attention to where implementation problems might lie
  3. Tendency to overlook opportunities for co-implementation

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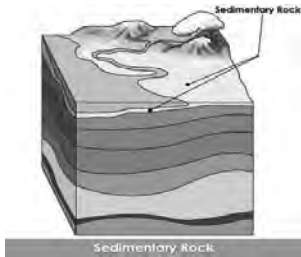
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### Thinking about reform

- The “sedimentary” model



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### What are Compstat and community policing?

- Compstat (CS) = strategic management system:
  - Laser-like focus on core crime control mission
  - Makes middle managers responsible for selecting and implementing crime strategies
  - Gathers and uses accurate, timely information to formulate strategies and to evaluate performance
- Community policing (CP) = philosophy and organizational strategy:
  - Focus on crime and social disorder through
    - community partnerships
    - problem solving
    - decentralization of decision-making to street level

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**The compatibility issue: CS vs. CP doctrines**

Reform Element	Community Policing	Compstat
Mission Clarification	Broadening police mission to include wide range of objectives	Focusing core mission on reducing crime
Internal accountability	Peripheral or nonexistent	Highest priority
Decentralization of decision making	To lowest level in org.	To middle managers (district commanders)
Organizational flexibility	Linked to community	Linked to crime control objectives
Data-driven	Valued	Essential
External accountability	Police consult with community on objectives and progress	Police publicize traditional crime statistics on agency performance
Innovative problem solving	Valued	Valued

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**COPS study on relationship between CS and CP**

- National survey of large municipal/county police departments
- Site visits
  - 7 agencies (large, medium and small)
  - 5 days. July 2006-June 2007
  - Interviews, observations, ride-alongs, focus groups
- Major finding = CS and CP operated largely independently
- Suggests possibilities for integration
  - Recommendations take advantage of Compstat's tangible framework while simultaneously countering its tendency to reinforce traditional command and control model

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**1. Harness CP values, goals, and practices to CS**

- Broaden the CS mission beyond serious crime to include the prioritization, measurement, and reporting of CP concerns at regular CS meetings
  - Routinely report on community-identified problems during CS meetings
  - Create performance measures that reinforce fundamental importance of CP objectives to organization's existence
    - (e.g., annual surveys, focus groups of key stakeholders)

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**2. Increase accountability for performance down the chain of command**

- Drive down the spike of accountability beyond middle managers to the lower ranks
  - Assign patrol officers to permanent beat teams supervised by a sergeant to increase “ownership” for resolving crime and disorder problems
  - Hold district-level CS meetings

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**3. Change CS meetings to be more strategic and evidence-based**

- Restructure CS meetings to focus more intensively on using scientific research to guide identification of most promising strategies and to foster creativity
  - Lengthen period between CS meetings to encourage innovation and not “knee-jerk” responses
  - Create small group meetings attended by key decision-makers
  - Consult research, invite local criminologists

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**4. Strengthen capacity for crime analysis, POP, and problem solving**

- Support strategic goals and values of CP with resources and training
  - Decentralize crime analysis units to support district personnel in their problem analysis efforts
  - Increase training in POP for district commanders and in basic skills of problem solving for line level officers

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## Successful co-implementation

- From Sergio Fernandez and Hal Rainey, “Managing Successful Organization Change in the Public Sector” *Public Administration Review* (2006)
  - Leaders persuasively communicate need for change (listening and learning as part of process)
  - Ensure leadership commitment to change
  - Develop a strategic plan
  - Build internal support and overcome resistance
  - Build external support
  - Provide resources
  - Institutionalize change
  - Use an integrative, comprehensive approach

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## Conclusion

- Identify and compare core elements of reforms
- Consider opportunities for integration – would these deliver benefits?
- Be mindful of reforms’ relationship to existing organizational structures and practices – how do they fit?
- Consider carefully how to manage organizational change

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# Maximizing the Benefits of Reform:



Integrating Compstat  
and Community Policing  
in America

James J. Willis

Stephen D. Mastrofski

Tammy Rinehart Kochel

Center for Justice Leadership and Management

George Mason University

**Maximizing the Benefits of Reform:  
Integrating Compstat and  
Community Policing in America**

Submitted by  
James J. Willis  
Stephen D. Mastrofski  
Tammy Rinehart Kochel

Center for Justice Leadership and Management  
George Mason University

February 2010

## Executive Summary

During the last quarter century or so, Compstat and community policing have emerged as powerful engines of police reform in the United States. Compstat is a strategic management system focused on reducing serious crime by decentralizing decision-making to middle managers operating out of precincts or districts, by holding these managers accountable for performance, and by increasing the organization's capacity to identify, understand, and monitor responses to crime problems. Community policing can be characterized as a philosophy and an organizational strategy designed to reduce crime and disorder through community partnerships, problem solving, and the delegation of greater decision-making authority to patrol officers and their sergeants at the beat level. It varies more than Compstat from place to place in response to local problems and community resources. To date, researchers have focused their energy on identifying the individual merits and weaknesses of each, but have given much less attention to how well these reforms operate when implemented in the same police organization. The Office of Community Oriented Policing Services (the COPS Office) asked us to conduct research and write a report on this co-implementation issue: Do Compstat and community policing work together, mutually supporting each other, or are there points of conflict, where pursuing one makes it harder to pursue the other successfully? Moreover, do they work separately, that is each having little consequence for the other?

This report summarizes findings from the first national study of Compstat and community policing, suggesting that these reforms operated largely independently from each other, with one having little effect on the other. Their simultaneous operation helped departments respond to a broader set of goals and to engage in a wider variety of tasks than had they implemented just one reform. Thus, they had an additive effect—one compensating for the limitations of the other in helping the organization respond more comprehensively to the diverse demands it confronted in its external environment. Put another way, what our survey suggested and what we observed during our short site visits to seven police departments that reported fully implementing Compstat and community policing was that Compstat contributed X, and community policing contributed Y. By implementing both reforms, an agency gained X + Y.

The finding that Compstat and community policing worked in parallel, but independently, suggests there may be opportunities for making these reforms work more closely with each other. This report uses these findings as an empirical basis for making recommendations for these reforms' integration. Given our finding that Compstat and community policing were essentially stove-piped and operating independently of each other, we inferred that there were opportunities for combining their core elements in ways that may promise greater multiplicative effects to co-implementation (Compstat x community policing)—effects that could be higher than those that are simply additive (Compstat + community policing). Take, for example, a department that has fully implemented Compstat and community policing but only reinforces its Compstat crime-reduction mission through the regular reporting of official crime statistics. In this case, because there are no similar measures to underscore the importance of community policing objectives, Compstat and community policing can be viewed as coexisting rather than mutually reinforcing. In contrast, an integrated model might include the prioritization, measurement, and reporting on community policing concerns (e.g., problems identified by community members, less serious social order offenses, fear of crime) as well

as traditional crime statistics at regular Compstat meetings. Among other benefits, taking such an approach allows top management to simultaneously place a high value on Compstat *and* community policing objectives and on monitoring the organization's performance under each. Thus, by simply including measures of success for both crime *and* community policing at Compstat meetings, the department more than doubles the return on its investment in these reforms. This potential for "efficiency gains" through integration is the basis for the recommendations that follow (Stephens, 2009).

We envision a Compstat/community policing model that tries to reinforce the values, objectives, and practices of community policing by integrating them with Compstat's core organizational structures. In order for these reforms to work in ways that are mutually reinforcing rather than at cross-purposes, we also recommend a number of significant changes to how the Compstat structures we observed currently operate. Thus, integration is not simply a case of grafting some elements of community policing onto fundamentally unaltered Compstat structures. Such an approach would not counter Compstat's tendency to reinforce the traditional hierarchical structure of the police organization.

## Methodology

To better understand this co-implementation issue, we used information from two sources collected sequentially: (1) a national mail survey conducted during spring and summer 2006 of 566 local and county police agencies with at least 100 sworn officers; and (2) intensive site visits (5 days in length) made to seven police agencies in 2006 and 2007 who reported fully implementing Compstat and community policing, experiencing a wide variety of successes and problems with their co-implementation, and who differed in size, organization, and crime environment.

## Recommendations

Our research suggests that compared with Compstat, whose components constitute a single program, community policing is more multifaceted, flexible, and diverse, which can make it more challenging to implement in a systematic or coherent way. The distinctive values and policing styles that these reforms embody, at least as they are currently implemented, may also help explain why many of those we interviewed struggled to envision a more integrated Compstat/community policing model.

The four recommendations we propose here seek to take advantage of the more tangible framework that Compstat provides while simultaneously countering its tendency to reinforce the traditional hierarchical structure of the police organization (through its focus on serious crime, top-down control, and centralized decision-making)—an approach that conflicts with several key community policing principles, including broadening the police mission beyond serious crime and delegating greater decision-making authority to those at the street level. Thus, our recommendations try to integrate Compstat's core elements under the broader community policing philosophy while restructuring these elements in ways that make these reforms mutually reinforcing rather than working at cross-purposes.

Our major recommendations for integrating Compstat and community policing, including specific strategies or action steps for their implementation, are as follows:

### **Recommendation 1:**

#### **Harness community policing values, goals, and practices to Compstat**

*Broaden the Compstat process beyond serious crime to include the prioritization, measurement, and reporting of community policing concerns at regular Compstat meetings.*

#### ***Strategies for implementation:***

- ◆ Routinely report on community-identified problems during Compstat meetings to focus the organization on community policing priorities
- ◆ Create performance measures that reinforce the fundamental importance of community policing objectives, values, and activities to the organization's overarching existence.

### **Recommendation 2:**

#### **Increase accountability down the chain of command for performance**

*Push accountability for crime and community policing down the chain of command by assigning individual officers to beat teams headed by a patrol sergeant, delegating responsibilities to these teams and not to individual community policing specialists or units, and requiring that all team members participate regularly in monthly beat meetings.*

#### ***Strategies for implementation:***

- ◆ Assign patrol officers to permanent beat teams supervised by patrol sergeants to increase their sense of "ownership" for reducing crime and disorder problems and reconsider call-management policies
- ◆ Hold district-level Compstat meetings with beat team leaders to distribute accountability more equitably throughout the organization
- ◆ Provide patrol sergeants with the necessary guidance and leadership skills to carry out the organization's Compstat and community policing mission.

### **Recommendation 3:**

#### Change Compstat meetings to operate more strategically

*Restructure Compstat meetings to focus the organization's attention more intensively on using scientific research and in-house evaluations to guide the identification and implementation of the most promising strategies for tackling crime and community problems, and on assessing short- and long-term outcomes.*

#### *Strategies for implementation:*

- ◆ Lengthen the period between department-level Compstat meetings to encourage district commanders to innovate and develop a better understanding of the nature of problems and more comprehensive long-term solutions
- ◆ Create small group meetings attended by key decision-makers and focused on addressing crime and community problems by thinking out loud, exchanging ideas, and querying assumptions
- ◆ Use evidence cops to help focus resources on solutions that research evidence shows are the most likely to reduce crime and disorder problems
- ◆ Build an institutional memory by systematically recording efforts and outcomes of police strategies.

### **Recommendation 4:**

#### Commit substantial resources to crime analysis and training in problem-oriented policing (POP), problem solving, and building partnerships

*Encourage acceptance of the goals and values of Compstat and community policing and the successful application of their strategic elements by committing substantial resources to crime analysis units and to helping officers of all ranks develop new skills and knowledge. Primary responsibility for the comprehensive application of POP should be assigned to middle managers (district commanders), while the rank and file and local residents should be taught basic problem-solving skills, so that they can work together on tackling crime and neighborhood problems effectively.*

#### *Strategies for implementation:*

- ◆ Broaden responsibility for problem analysis to include rank-and-file officers who are knowledgeable about local crime and disorder problems
- ◆ Decentralize crime analysis units to support district personnel in their problem analysis efforts
- ◆ Increase training in problem analysis for all line personnel and provide training to community members.

These recommendations are based on what we observed at the seven sites we visited and on the experiences of this report's senior authors who have been researching and writing about Compstat and community policing for more than a decade. Because these recommendations have not been implemented and tested in any police organization, we do not have empirical evidence that what we propose here will actually work. Despite this limitation, we suggest that the evidence of how things *currently* work warrants serious experimentation with our proposals. It was our goal to make practical suggestions, but it is beyond the scope of this report to lay out a step-by-step guide for how integration might be accomplished. Obviously departments vary in size, resources, and crime environment, so these recommendations would have to be adapted to an agency's particular goals and circumstances. Despite these limitations, given the lack of research on this subject, we believe that there is considerable value in this initial effort to identify and examine the major compatibility issues, and then to describe our findings across several sites as a platform for suggesting some plausible changes. The alternative is simply to maintain the status quo. Thus, the purpose of this report is to deepen understanding among researchers, practitioners, and policymakers about the current relationship between Compstat and community policing, and also to stimulate debate about alternative combinations that have the potential to make them work together in more desirable ways.

Because these recommendations are necessarily broad and call for a transformation in the way that most police agencies currently operate, they will undoubtedly be viewed by some as implausible. What we suggest may be ambitious and only represent the tip of the iceberg in terms of what needs to be done to bring about the kind of change we envision. Still, it is our hope that this analysis of two of the most highly touted policing innovations to emerge in the last 30 years provides a useful vision for reform and sharpens awareness of different possibilities for their co-implementation.



# Science in Policing

Professor David Weisburd

Director, Center for Evidence-Based Crime Policy

George Mason University

August 15, 2011

## Alternative Models for Innovation

### Clinical Experience ("Opinion") Model

- Innovation is identified, developed and diffused primarily on the basis of the experiences and opinions of practitioners
- Clinical experience is the basis for decision making, not just one part of that process

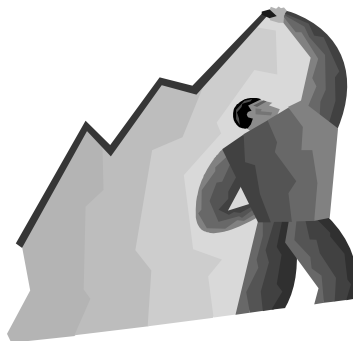
### Evidence-Based Model

- Programs & practices based on science (basic research) and clinical experience
  - The "good physician"
- Implemented first under pilot experimental conditions
- Not widely diffused until there is evidence of effectiveness, testing for "cures that harm."

## Risks of the Clinical Experience Model: Rhetoric, Then A High Likelihood of Failure



**Evidence Based Model Minimizes the Risks of Failure  
Because it Draws Upon Existing Knowledge, and Tests  
Programs and Practices Before they are Widely Diffused**



## Why are Experiments Important?

- High level of internal validity
  - Internal validity = extent to which a study can be confident that the effect observed is the “true” effect of the intervention
  - Results are believable
- Randomization allows for making causal statements
  - If crime declines in a well-designed experiment, then one can assume the treatment caused the decline
- Less rigorous methods may give us biased results
  - If crime goes down after an intervention, could be many other factors that explain this decline other than the intervention (e.g. citywide trend, high profile event), but experiments remove these potential biases

## Are Experiments Ethical?

- Must be mindful of ethical concerns, but in policing can often minimize such concerns by randomizing places instead of people
  - Often face less political resistance
- Randomization can be a fair way to distribute limited resources
  - Department may only have enough manpower to provide intensive treatment to  $\frac{1}{2}$  the city's hot spots
- It's perhaps more unethical to not use rigorous evaluations of tactics because there can be “cures that harm”
  - e.g. Scared Straight had significant backfire effects

## For Evidence Based Policing to Succeed:

- Scientific research must become a natural and organic part of the police mission.
- Science must become a natural part of police education, and police education must become based in science.
- Science in policing must answer questions that are critical to the police function, and it must address problems that are at the core of policing and address the everyday realities that police face.
- The answers of science must be timely for the police.

## Changing to a Science-Based Policing Paradigm

	Old Paradigm	Science-based Policing
Education & Training	<ul style="list-style-type: none"> <li>• Legal knowledge</li> <li>• Work-based learning</li> </ul>	<ul style="list-style-type: none"> <li>• Link scientific knowledge with practice, continued professional development</li> </ul>
Leadership	<ul style="list-style-type: none"> <li>• Science useful when it supports decisions but inconvenient when it does not</li> </ul>	<ul style="list-style-type: none"> <li>• Leaders view science as essential to own and staff/agency's development</li> <li>• Leaders view science as crucial to efficiency, effectiveness, legitimacy with public</li> </ul>

Weisburd, David and Peter Neyroud. (2011). Police Science: Toward a New Paradigm. Harvard Executive Session on Policing and Public Safety. Washington, DC: National Institute of Justice.

## Changing to a Science-Based Policing Paradigm

	Old Paradigm	Science-based Policing
<b>Academic/ Police Relationship</b>	<ul style="list-style-type: none"> <li>• Separate, distinct institutional &amp; professional structures</li> </ul>	<ul style="list-style-type: none"> <li>• University police schools combine teaching &amp; research</li> <li>• Institutional links, personnel exchange with local agencies</li> </ul>
<b>Development of Practice</b>	<ul style="list-style-type: none"> <li>• Individual initiatives</li> <li>• Political mandates</li> <li>• Clinical decision-making</li> </ul>	<ul style="list-style-type: none"> <li>• Keeping up with basic research &amp; evaluation</li> <li>• Commitment to constant, systematic evaluation</li> </ul>
<b>Investment in Research</b>	<ul style="list-style-type: none"> <li>• Limited national, local &amp; individual investment</li> </ul>	<ul style="list-style-type: none"> <li>• Committed percentage of budget to evaluation of initiatives within national knowledge-building framework</li> </ul>

**An example of incorporating science into policing:**

**A hot spots experiment in the Sacramento Police Department**

Sergeant Renée Mitchell

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**The Importance of EBP for Sacramento**

- Lay offs - Effective and efficient
- Strategic planning
- Cultural beliefs
- Proven results can overcome past practice

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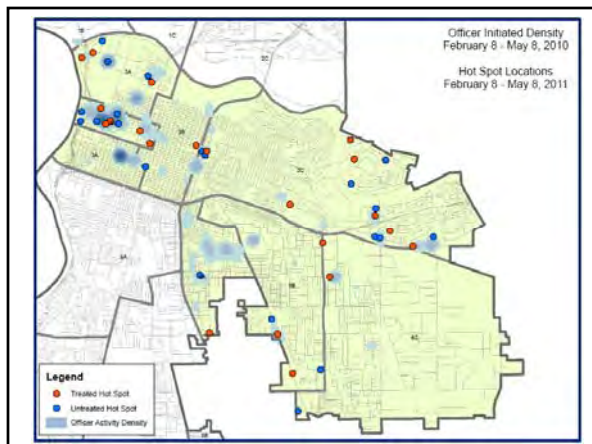
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## Reason for Study

- Officers engaging in pro-activity in areas that were not hot spots
- Improving Compstat
- Area captains agreed to a study based on the Koper curve
- Evaluate whether directing officers to hot spots for 12 -16 minutes would drive down crime and calls for service

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## Study Design

- 42 hotspots total
- Similar hot spots paired up to increase statistical power due to low sample size
- Each pair randomly assigned to treatment or non-treatment
- Study ran for 90 days – February 8 to May 8
- Officers put themselves D1HOT on a hot spot computer generated in random order for 12-16 minutes approximately every 2 hours
- Officers were given suggestions for proactivity and told to be highly visible

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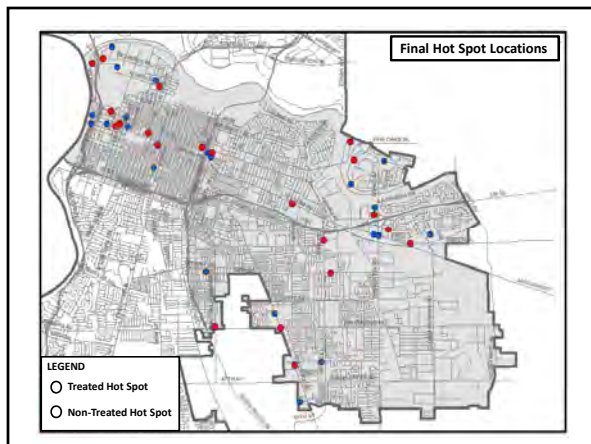
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### Total Number of Visits

228 Jibboom St – 420  
 201 Richards Blvd – 408  
 N. B St/14<sup>th</sup> St – 361  
 15<sup>th</sup> St/K St – 378  
 1809 Capitol Ave – 359  
 2838 J St – 379  
 1025 Alhambra – 361  
 5600 Folsom Blvd – 252  
 8341 Folsom Blvd – 277  
 7901 College Town Dr – 284  
 400 University Ave – 269  
 200 Bicentennial Cir – 249  
 100 Cadillac Dr – 270  
 5<sup>th</sup> St/I St – 223  
 8<sup>th</sup> St/K St – 233  
 715 L St – 227  
 5550 MLK Blvd – 559  
 6125 Stockton Blvd – 408  
 Stockton Blvd/Fruitridge Rd – 437  
 2933 65<sup>th</sup> St – 361  
 6770 14<sup>th</sup> Ave - 380

**7,095 total visits**  
(2-8-11 to 5-8-11)

Week 1 – 446 visits (2-8 to 2-13)  
 Week 2 – 467 visits (2-14 to 2-20)  
 Week 3 – 698 visits (2-21 to 2-27)  
 Week 4 – 664 visits (2-28 to 3-6)  
 Week 5 – 521 visits (3-7 to 3-13)  
 Week 6 – 532 visits (3-14 to 3-20)  
 Week 7 – 667 visits (3-21 to 3-27)  
 Week 8 – 548 visits (3-28 to 4-3)  
 Week 9 – 526 visits (4-4 to 4-10)  
 Week 10 – 530 visits (4-11 to 4-17)  
 Week 11 – 524 visits (4-18 to 4-24)  
 Week 12 – 540 visits (4-25 to 5-1)  
 Week 13 – 432 visits (5-2 to 5-8)

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### Results

- **Part I crimes decreased by 25% in treatment areas**  
 – Part I crimes increased by 27.3% in non-treatment areas
- **CFS decreased by 7.7% in treatment areas**  
 – CFS increased by 10.9% in non-treatment areas
- George Mason University ran a one-tailed test in which p=.0255 for Part I crimes and p = .0405 for CFS, which is statistically significant at a scientific level of p < .05  
 – **Meaning you can assume with 95% accuracy that the effect of the treatment is not caused by chance**

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### Treated vs. Non-Treated Hot Spots

	HOT SPOT TYPE	FEB 8 TO MAY 8 2010	FEB 8 TO MAY 8 2011	% OF CHANGE
CALLS FOR SERVICE	TREATED	977	902	-7.7%
	NOT TREATED	853	946	10.9%
	PART 1 CRIMES			
	TREATED	140	105	-25.0%
	NOT TREATED	95	121	27.4%

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## But, What If?

- Response times to CFS increase
- Pro-activity decreases
- Displacement occurs
  - 2 block area surrounding both T and NT areas
  - Part I increased in two areas
  - CFS increased in three areas

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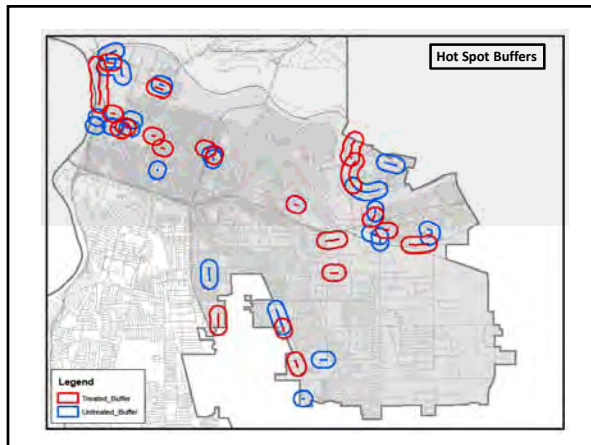
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## Obstacles

- Deeply embedded culture
- What is a randomized control trial?
- What is the difference between research design and pulling statistics?
- Explain what evaluation is rather than creating a program for promotion or for the public
- Promise that if it doesn't work, you won't use it; then implement a study you know works
- It's not a party trick

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### Lessons Learned

- How do we create the design with the systems we have available
- Personally go out to the hot spots
  - Train team on EBP
  - Research available
- Issue study from the Office of the Chief, not from the Sergeant of the Crime Analysis Unit
- Officer reaction
  - Don't introduce two new ideas at once
  - Take time to train officers on EBP theory

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### Incorporating Science into Policing

- A program manager with the ability to identify what you are testing for
- Knowledge of mapping systems and crime analysis
- Ability to problem-solve and work well with a team to encourage honest feedback
- A sufficiently large team with ability to multi-task
- Strong leadership – not about experiments
  - Strategize – create infrastructure

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### Cultural Change

- Trying to change underlying belief system about policing – culture/management
- Showing executive management the value of EBP
- Training at in-service or the academy
- Incorporating it into the FTO program
- Need 10-20% conversion for culture to change

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## Why EBP Is Important

- Need to find a way of policing that uses fewer resources but still reduces crime.
- Prevents wasted time, effort and money
- Allows officers to actually see whether something works; can help in converting officers to evidence-based policing
- Gives you a scientific argument against media, politicians and public
- Does not require a significant investment of funds – just employee resources

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# IDEAS IN AMERICAN POLICING



Number 9  
January 2008

## *Place-Based Policing*

By David Weisburd

Police practices are focused primarily on people and often begin when people call the police. They are focused on identifying offenders who commit crimes, and end with the arrests of those offenders and their processing through the criminal justice system. Police attention is also directed at times to broader community problems and “community caretaking” (Kahan and Meares 1998; Mastrofski 1999), and the police are expected to play a role in securing communities in emergencies and more recently in response to homeland security threats (Waddington and Neyroud 2007). But despite the broader mandate of the police, the core practices of policing assume that people, whether victims or offenders, are the key units of police work.

Police professionals might take exception to this portrait

of policing. They will argue that police in recent years have begun to think not only about offenders and victims but also about the situations and places that are the context of crime. To bolster this argument, they might note that police agencies throughout the country have begun to focus in on crime hot spots and that crime mapping has become a central feature of cutting-edge law

enforcement (Weisburd and Lum 2005). Moreover, they could argue that the location of crime is a key component of many recent police innovations, such as Compstat (Silverman 1999), hot spots policing (Sherman and Weisburd 1995; Weisburd and Braga 2006a), and problem-oriented policing (Eck 2003). In this sense, many forward-looking police agencies have begun to

*Ideas in American Policing* presents commentary and insight from leading criminologists on issues of interest to scholars, practitioners, and policy makers. The papers published in this series are from the Police Foundation lecture series of the same name. Points of view in this document are those of the author and do not necessarily represent the official position of the Police Foundation. The full series is available online at <http://www.policefoundation.org/docs/library.html>.

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**David Weisburd** is Walter E. Meyer Professor of Law and Criminal Justice at the Hebrew University in Jerusalem, and Professor of Criminology and Criminal Justice at the University of Maryland, College Park. He is also a Senior Fellow at the Police Foundation and Chair of its Research Advisory Committee.

recognize that places as well as people need to be considered if police are to do something about crime and other related problems.

It is still the case, however, that catching criminals and processing them through the criminal justice system remains the predominant police crime prevention strategy, and this is true even, for example, when innovative approaches such as problem-oriented policing are employed (Braga and Weisburd 2006). Moreover, despite interest in crime mapping, information systems in policing continue to be centered on victims and offenders. Databases in American policing tell us little about the context of crime, despite the fact that police have begun to focus on such contexts as hot spots of crime. In turn, despite important strategic innovations in policing, like Compstat that demand that the police attend to problem places, policing today continues to be geographically organized into units such as police precincts or beats that have little to do with the crime places that recent research has identified as central to understanding crime.

In this essay, I am going to argue that police should put places rather than people at the center of police practices. My point is not simply that places should be considered in policing but that they should become a key component of the databases that police use; of the geographic organization of police activities; of the strategic

approaches that police employ to combat crime and disorder; and in the definitions of the role of the police in urban settings. My essay will show that place-based policing, as opposed to person-based policing, is more efficient as a focus of police actions; provides a more stable target for police activities; has a stronger evidence base; and raises fewer ethical and legal problems. These benefits of place-based policing suggest that the police should shift their primary focus from the people involved in crimes to the contexts of criminal behavior. This is no longer a radical idea for police administrators who have fostered and developed innovations that are concerned with the context of crime (Bratton 1998; Bueermann 1999; Maple and Mitchell 1999). Police scholars in turn have pointed to the importance of places in crime causation and crime prevention for almost three decades (Eck and Weisburd 1995; Sherman, Gartin, and Buerger 1989; Sherman and Weisburd 1995; Spelman and Eck 1989a, 1989b; Weisburd 2004; Weisburd, Bushway, Lum, and Yang 2004). Place-based policing in this context represents an evolution in policing even if it demands a reconsideration of the key organizing units of police practice.

Recognizing that it is not enough to simply argue in favor of place-based policing, I will conclude by suggesting practical ways in which the police must change to effectively implement these practices. Of course, in

advancing new approaches, the police in the field will adopt and innovate as they identify new problems and opportunities. My suggestions in this regard should be seen as ideas for implementing policies that can advance the policing industry. Police over the last two decades have shown a remarkable degree of interest in innovation to advance police practices (Skogan and Frydl 2004; Weisburd and Braga 2006b). Place-based policing represents a natural progression in this process.

## What Is a Place?

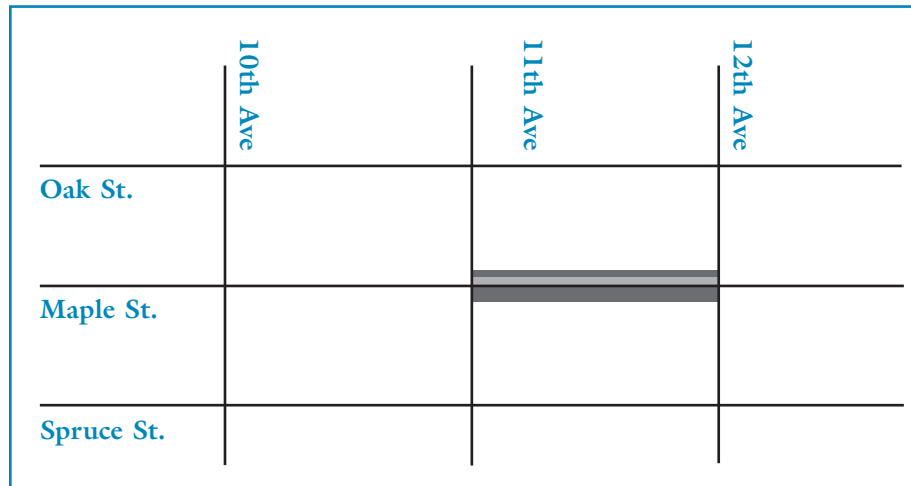
Before we turn to the benefits of place-based policing, it is important to begin by defining what I mean by place. Place-based policing is not simply the application of police strategies to units of geography. Traditional policing in this sense can be seen as place-based, since police have routinely defined their units of operation in terms of large areas, such as police precincts and beats. In place-based policing, place refers to a very different level of geographic aggregation than has traditionally interested police executives and planners. Places in this context are very small micro units of analysis, such as buildings or addresses; block faces, or street segments; or clusters of addresses, block faces, or street segments (Eck and Weisburd 1995). When crime is concentrated at such places, they are commonly called hot spots.

Two illustrations of crime places are useful since they point to the different ways that place may be important in understanding crime and in police interventions. In the Minneapolis Hot Spots Experiment (1995), Lawrence Sherman and I identified street segments or street blocks for increased patrol presence (see Figure 1).

We used street blocks in part because they represented a unit of analysis that was easily identified by police and could provide a natural setting for police interventions. But we also recognized, as have other scholars, that such factors as the visual closeness of residents of a block; interrelated role obligations; acceptance of certain common norms and behavior; common, regularly recurring rhythms of activity; the physical boundaries of the street; and the historical evolution of the street segment make the street block a particularly useful unit for analysis for policing places (Hunter and Baumer 1982; Taylor, Gottfredson, and Brower 1984).

In the Jersey City Displacement and Diffusion Project (Weisburd, Wyckoff, Ready, Eck, Hinkle, and Gajewski 2004; Weisburd, Wyckoff, Ready, Eck, Hinkle, and Gajewski 2006), my colleagues and I also sought to identify a discrete place for police attention. But in this study we sought to examine specific types of criminal markets. Such markets often spread across street segments in a larger area

*Figure 1: Place in the Minneapolis Hot Spots Experiment*

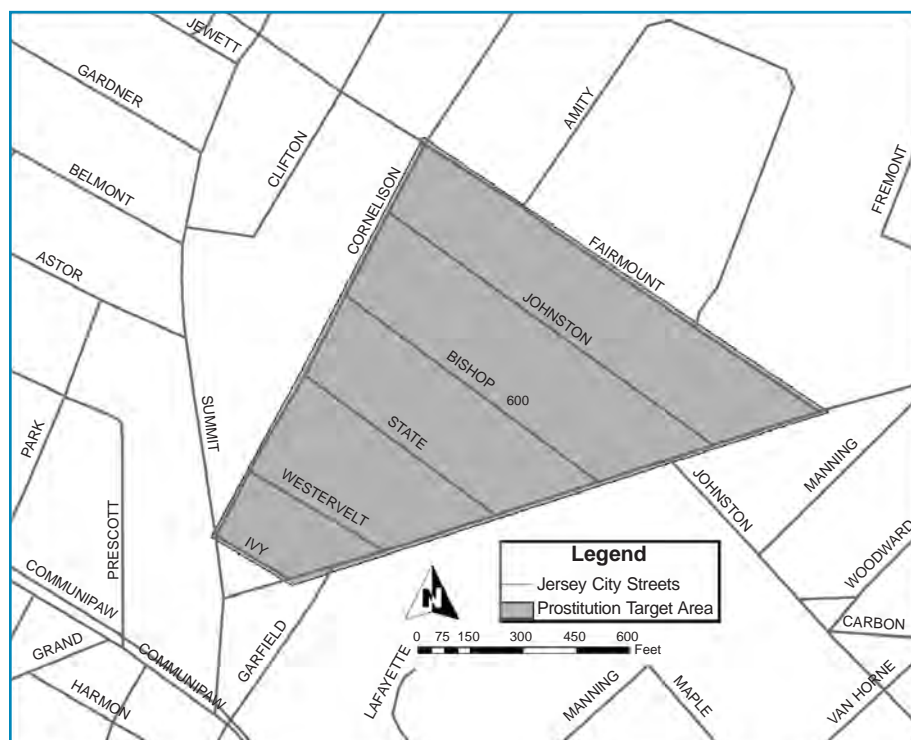


of criminal activity. Figure 2 illustrates the boundaries of a prostitution market identified for intervention in Jersey City.

Included in this case is a group of city blocks but, importantly, this is still much smaller than the

neighborhoods or police precincts that have often been the focus of police interventions and scientific study of crime. The displacement project and the Minneapolis experiment illustrate more generally the ways in which units

*Figure 2: Place in the Jersey City Displacement and Diffusion Project*





of place might differ depending on the interests of the police and the underlying structure of crime problems. This issue of defining units of analysis for place-based policing is one that certainly will demand more attention if police adopt this approach on a large scale (see also Weisburd, Bruinsma, and Bernasco, forthcoming).

## What Is Place-Based Policing?

While my intention is to explain why policing places should become a central focus of modern policing, it is useful to define initially what is meant by place-based policing. At its core is a concern with focusing in on places where crimes are concentrated and it begins with an assumption that there is something about a place that leads to crimes occurring there. In this sense, place-based policing is theoretically based on “routine activities theory” (Cohen and Felson 1979; Felson 1994), which identifies crime as a matter of the convergence of suitable targets (e.g., victims), an absence of “capable guardians” (e.g., police), and the presence of motivated or potential offenders. Of course, this all must occur in the context of a place or situation, and accordingly place-based policing recognizes that there is something about specific places that leads to the convergence of these elements (Brantingham and Brantingham 1981, 1984).

The strategies of place-based policing can be as simple as hot spots patrol, as was the case in the Minneapolis Hot Spots Policing Experiment, where the police intervention involved placing more patrol resources at places where crime is concentrated (hot spots). But place-based policing can also take a much more complex approach to the amelioration of crime problems at places. In the Jersey City Drug Market Analysis Project (Weisburd and Green 1995), for example, a three-step program (including identifying and analyzing problems, developing tailored responses, and maintaining crime control gains) was used to reduce problems at drug hot spots. In the Jersey City Problem-Oriented Policing Project (Braga, Weisburd, Waring, Mazerolle, Spelman, and Gajewski 1999), a problem-oriented policing approach was taken in developing a specific strategy for each of the small areas defined as violent crime hot spots.

In place-based policing, “place managers” are often central figures in trying to do something about crime and crime-related problems (Eck 1994; Eck and Weisburd 1995). For example, the way in which bartenders and bouncers regulate behavior has been found to be strongly related to violence in drinking establishments (Homel and Clark 1995). Place managers, such as business owners or managers, bartenders,

doormen, or simply people who live and work at places, can be an important resource for policing places (Scott 2005). A related approach to place-based policing involves the use of civil remedies to “persuade or coerce non-offending third parties to take responsibility and action to prevent or end criminal or nuisance behavior” (Mazerolle and Roehl 1998: 1). In such cases, the police might use nuisance and abatement statutes to induce landlords and property owners to aid the police in controlling crime at places.

## The Advantages of Policing Places

Having defined what I mean by places and provided some initial examples of place-based policing strategies, I want to turn to why place-based policing makes sense as a central strategic and practical approach to policing. The basic and applied research evidence strongly supports a greater focus on places. As I detail below, place-based policing provides an approach that is likely to be more efficient than person-based policing in terms of the allocation of police resources. It also provides a focus for police interventions that is relatively stable across time and more easily targeted than offender-based crime prevention. Perhaps most importantly, as I will show, there is convincing experimental evidence for the effectiveness of place-based policing.

### *The Efficiency of Place-Based Policing*

The efficiency of police strategies can be defined in a number of different ways, depending on the features of policing that one might want to maximize. I think it is reasonable to begin with a definition of police efficiency that suggests that strategies are more efficient to the extent that they offer police the same crime prevention value with a smaller number of targets. Such a definition implies that more efficient tactics are also more cost effective. Of course, this would be the case only if the strategies used are similar, irrespective of the targets identified, a point I will return to later. Efficiency is important in policing because police resources are limited.

To the extent that crime is concentrated among a small number of potential targets, the efficiency of policing can be maximized. In the case of places, basic research has pointed to a tremendous concentration of crime at place. The first major study to point this out was conducted by Lawrence Sherman in the late 1980s. Sherman examined crime calls to the police at addresses in Minneapolis and found that about 3.5 percent of the addresses in Minneapolis in one year produced about 50 percent of the crime calls (Sherman, Gartin, and Buerger 1989). More recently, my colleagues and I (Weisburd, Bushway, Lum, and Yang 2004) have shown not

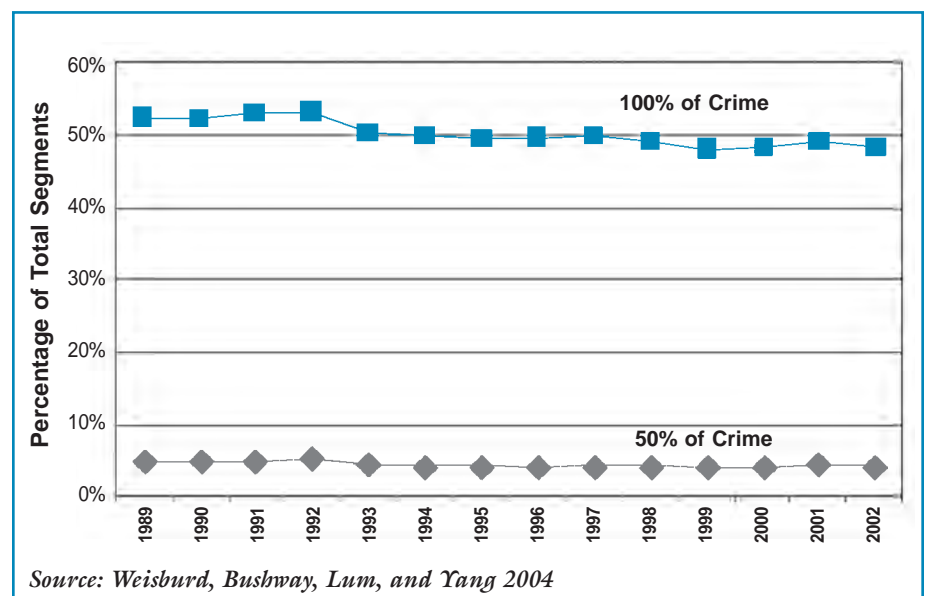
only that a similar level of crime concentration exists at street segments in Seattle, but also that the concentration of reported crime incidents at micro places is stable over a fourteen-year period (see Figure 3).

There are, in turn, a series of studies that suggest that significant concentration of crime at micro levels of geography exists, regardless of the specific unit of analysis defined (Brantingham and Brantingham 1999; Crow and Bull 1975; Pierce, Spaar, and Briggs 1988; Roncek 2000; Sherman et al. 1989; Weisburd and Green 1994; Weisburd, Maher, and Sherman 1992). This concentration seems to be even greater for specific types of crime. For example, my colleagues and I found that 86 street segments out of 29,849 account for one third of the total number of juvenile crime

incidents in Seattle (Weisburd, Morris, and Groff, in progress).

It is important to note that such clustering of crime at small units of geography does not simply mask trends that are occurring at a larger geographic level, such as communities. Research has shown, for example, that in what are generally seen as good parts of town there are often streets with strong crime concentrations, and in what are often defined as bad neighborhoods, many places are relatively free of crime (Weisburd and Green 1994). The extent to which crime at micro units of place varies from street to street is illustrated in a recent study of hot spots of juvenile crime (Groff, Weisburd, and Morris, forthcoming). Using geographic statistics that identify spatial independence, Groff et al. show that street segments right next

*Figure 3: Concentration of Crime Incidents Across 30,000 Street Segments in Seattle, Washington*



to each other tend to have very different levels and patterns of crime over time.

Having said that crime is concentrated at place, it is important to note that crime is also concentrated among offenders, a fact pointed out in research by Wolfgang, Figlio, and Sellin (1972) more than thirty years ago. Is crime more concentrated at places than among offenders? We tried to make this comparison using crime incidents from Seattle over the 1989 to 2002 time period. Our results suggest that when using targets as a criterion, places are indeed a more efficient focus than offenders. Using this approach, we found that on average about 1,500 street segments accounted for 50 percent of the crime each year during this period. During the same period, 6,108 offenders were responsible for 50 percent of the crime each year. Simply stated, the police have to approach four times as many targets to identify the same level of overall crime when they focus on people as opposed to places.

### *The Stability of Place-Based Targets*

The discussion so far ignores a major issue in assessing the overall efficiency of police strategies. Stability of police targets is an important consideration in developing police practices. If there is high instability of crime across time at a unit of analysis, then police strategies will be less efficient. For example, let

us say that criminals vary in offending greatly over time with a very high peak in one time period and very low activity in subsequent periods. Investment of resources in incarceration of such offenders may have little real crime prevention benefit, though of course it may satisfy important considerations of just punishments for criminals. Similarly, if it is very hard to identify and track targets for crime prevention initiatives, the efficiency of strategies will also be challenged.

There is perhaps no more established fact in criminology than the variability and instability of offending across the life course. A primary factor in this variability is the fact that most offenders age out of crime, often at a relatively young age (Blumstein, Cohen, Roth, and Visher 1986; Wolfgang et al. 1987; Gottfredson and Hirschi 1990; Tracy and Kempf-Leonard 1996; Laub and Sampson 2003). But there is also evidence of strong instability in criminal behavior for most offenders even when short time periods are observed. This may be contrasted with developmental patterns of crime at place, which suggest much stability in crime incidents over time. In our Seattle study of crime trends at places (Weisburd et al. 2004), we found not only that about the same number of street segments were responsible for 50 percent of the crime each year, but also that the street segments that tended to evidence very low or very high activity

at the beginning of the period of study in 1989 were similarly ranked at the end of the period in 2002. This is illustrated in Figure 4, where street segments are placed in crime trajectories using group-based trajectory analyses developed by Nagin and colleagues (Nagin 1999; Nagin and Tremblay 2001). While there are developmental trends in the data, what is most striking is the relative stability of crime at place over time.

This stability in turn suggests that place-based policing will not only be more efficient in terms of the number of targets but also in the application of police strategies to specific targets. Places, simply put, are not moving targets. A police strategy that is focused on very high crime rate hot spots is not likely to be focusing on places that will naturally become cool a year later. The stability of crime at place across time makes crime places a particularly salient focus for investment of police resources.

Places are not moving targets in another important sense in that, unlike offenders, they stay in one place. The American Housing Survey from the United States Census Bureau shows that Americans move once every seven years (American Housing Survey Branch 2005). It is reasonable to assume that offenders move even more often than this. Studies have often noted the difficulty of tracking offenders for survey research (Wolfgang et al. 1987; Laub and Sampson 2003), and it is a common experience of the

police to look for an offender and find that he or she no longer lives at the last known address. Place-based policing provides a target that stays in the same place. This is not an insignificant issue when considering the investment of police resources in crime prevention.

### *The Effectiveness of Place-Based Policing*

Although tradition and experience often provide the only guidance for criminal justice practitioners, there is a growing consensus among scholars, practitioners, and policy makers that crime control practices and policies should be rooted as much as possible in scientific evidence about “what works” (Cullen and Gendreau 2000; MacKenzie 2000; Sherman 1998; Sherman, Farrington, Welsh, and MacKenzie 2002). This trend is perhaps most prominent in the health professions where the idea of “evidence-based medicine” has gained strong government and professional support (Millenson 1997; Zuger 1997), though the evidence-based paradigm is also developing in other fields, including crime and justice (see Farrington and Weisburd 2007; Nutley and Davies 1999; Davies, Nutley,

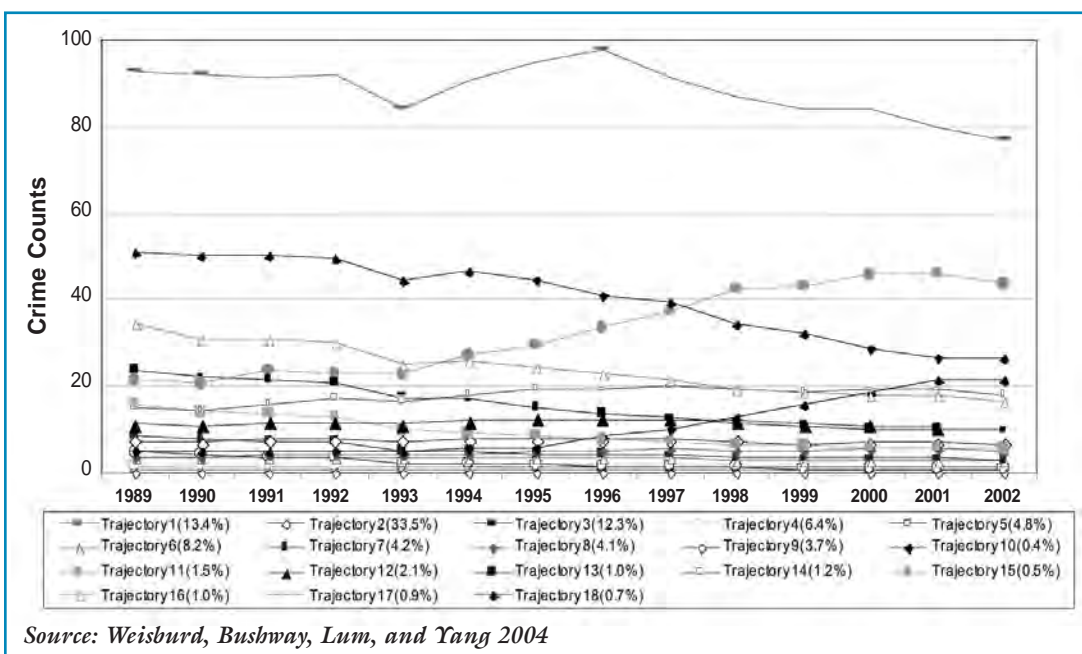
and Smith 2000). Using evidence as a criterion, there is substantial support for place-based policing. Indeed, the National Research Council, in its careful review of police practices and policies, concluded that “. . . [S]tudies that focused police resources on crime hot spots provide the strongest collective evidence of police effectiveness that is now available” (Skogan and Frydl 2004: 250).

The National Research Council conclusions are based on a series of nine studies examining place-based policing over the previous decade (Braga 2001). Of these, five studies were randomized experiments, which are generally seen as representing the most reliable evidence of program effectiveness (Campbell and Boruch 1975; Shadish, Cook, and Campbell 2002; Weisburd 2003; Wilkinson and Task Force on Statistical

Inference 1999). Five studies also looked at the problem of displacement of crime as a result of crime prevention efforts at specific places. One long-standing objection to focusing crime prevention geographically is that it will simply shift or displace crime to other places not receiving the same level of police attention (Repetto 1976). Such spatial displacement represents a threat to the overall crime prevention value of place-based interventions, since there is little value in crime prevention at very small units of geography if crime will simply move around the corner.

Importantly, eight of the nine studies (and all of the studies using experimental methods) reviewed by Braga (2001) and the National Research Council panel showed statistically significant crime prevention

*Figure 4: Trajectories of Crime for Street Segments in Seattle (1989–2002)*





benefits for the place-based policing approach. None of the studies examining spatial displacement found evidence of significant displacement to other places. Indeed, four of five studies examining this problem found evidence of a “diffusion of crime control benefits” (Clarke and Weisburd 1994), meaning that areas close by the sites receiving the intervention actually showed crime prevention gains despite the fact that they were not the focus of police strategies.

Given the common assumption of spatial displacement, it is worthwhile to note a recent Police Foundation study that focused specifically on this question and that was referred to earlier when I discussed the definition of places (Weisburd et al. 2004; Weisburd et al. 2006). Unlike earlier studies, the Jersey City Displacement and Diffusion Project was not designed to assess the impacts of particular police interventions. Rather, it was singularly focused on examining to what extent there was immediate spatial displacement as a result of hot spots policing strategies. The findings in this study follow earlier results that were developed in the context of tests of program outcomes at targeted areas (described above). There was no evidence of immediate spatial displacement. There was, however, strong evidence of spatial diffusion of crime control benefits.

That study provided us with the advantage of qualitative data collection to understand why

place-based policing has target impacts without the type of spatial displacement outcomes that are commonly assumed. We found that offenders did not perceive all places as having the same opportunities for crime. For example, easy access for clients was a critical criterion for drug dealers, as was the presence of relatively few residents who might call the police about prostitutes. The need for special characteristics of places to carry out criminal activity meant that crime could not simply displace to every place in a city. Indeed, the number of places evidencing such characteristics might be relatively small. In turn, spatial movement of offenders from crime sites often involved substantial effort and risk by offenders. As one drug dealer told us, “. . . [Y]ou really can’t deal in areas you aren’t living in, it ain’t your turf. That’s how people get themselves killed” (Weisburd et al. 2006: 578). Moreover, offenders, like non-offenders, come to feel comfortable with their home turf and the people that they encounter. As a prostitute explained, “In my area, I know the people. Up on ‘the hill’, I don’t really know the people at that end of town” (Weisburd et al. 2006: 579).

Whatever the explanation for the lack of spatial displacement outcomes, these research results reinforce the evidence base for place-based policing. As reported by the National Research Council, place-based policing

is supported by the strongest evidence that policing scholars have yet to develop for a crime prevention approach.

## Legal and Ethical Concerns

Police often complain that their hands are tied in doing something about criminals. While the extent of legal constraints on policing are the source of much debate (Bittner 1967; Ohlin and Remington 1993; Skogan and Frydl 2004; Vollmer 1933; Wickersham Commission 1931; Wilson 1950), it is clear that place-based policing offers a target for police interventions that is less protected by traditional legal guarantees. The common law and our legal traditions have placed less concern over the rights of places than the rights of individuals. It is not that police can do what they like at places. Rather, the extent of constitutional and procedural guarantees has at times been relaxed where places are targeted.

When it is established that places are crime targets or deserve special protection, it becomes easier to legally justify enforcement in regard to individual offenders. For example, Dan Kahan and Tracey Meares (1998: 1172) note that law enforcement officials “needn’t obtain a warrant or even have probable cause . . . to stop motorists at sobriety checkpoints or to search all individuals entering airports or government

buildings.” This means that at certain places, where issues of public safety are a central concern, it is possible to justify policing activities that would be unacceptable if carried out against individuals in other places. Places where crime is concentrated are often seen to meet this criterion, as is the case in many cities that have designated drug market areas for special attention. Safe school zones are another example of the identification of places that allow special activities by the police, in this case because of the vulnerability of potential victims. The constitutional issues here are complex and do not simply justify intrusion in every case. Nonetheless, politicians, judges, and, indeed, ordinary citizens have an intuition that police should be allowed appropriate discretion to police certain places that exhibit specific problems, such as concentrated crime, when there is the support of residents.<sup>1</sup>

Place-based policing, accordingly, provides a target for police that may lead to fewer constraints in terms of the development of crime prevention strategies. But, importantly, it also suggests an approach to policing that may lead to less coercive and, in the long term, more humane crime prevention practices. To be successful in place-based policing, it is often necessary for police to expand their toolbox to take into account

the fact that their targets are places and not people. The civil law rather than law enforcement is often the most successful method for interrupting crime at place (Mazerolle and Roehl 1998). As Cheh has observed (1991: 1329), “Police and prosecutors have embraced civil strategies not only because they expand the arsenal of weapons available to reach anti-social behavior, but also because officials believe that civil remedies offer speedy solutions that are unencumbered by the rigorous constitutional protections associated with criminal trials.” Whatever the reason for the shift in tactics from ones that rely on the criminal law to ones that rely on civil or administrative law, the end result is crime prevention strategies that are less reliant on traditional law enforcement practices that often lead to the arrest and imprisonment of offenders.

### *Increasing Prevention while Decreasing Incarceration*

Over the last two decades, we have begun to imprison Americans at higher and higher rates. Spending on prisons has increased at more than double the rate of spending on education and health care (Hughes 2006). The moral cost is that fully 2.3 million Americans everyday are in prisons or jails (Sabol, Couture, and Harrison 2007), institutions that are often dehumanizing and degrading. Policing places puts emphasis

on reducing opportunities for crime at places, not on waiting for crimes to occur and then arresting offenders. Successful crime prevention programs at places need not lead to high numbers of arrests, especially if methods are developed that discourage offenders, for example through “third party policing” (Mazerolle and Ransley 2005). In this sense, place-based policing offers an approach to crime prevention that can increase public safety while decreasing the human and financial costs of imprisonment for Americans. If place-based policing was to become the central focus of police, rather than the arrest and apprehension of offenders, we would likely see at the same time a reduction of prison populations and an increase in the crime prevention effectiveness of the police.

### **What Must Be Done?**

In my comments so far, I have tried to establish that place-based policing increases the efficiency of policing and focuses police resources on more stable targets; has a convincing evidence base regarding its effectiveness; and provides a focus for policing that can reduce legal barriers to police strategies and lessens the long-term social and moral consequences of person-based policing. But as I noted at the outset, many police practitioners would argue that policing already is concerned with places. What

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<sup>1</sup>I am indebted to Tracey Meares for her insights on these issues.

must change to implement a broad program of place-based policing?

It is important to start out by recognizing that places have indeed always been a concern for the police. As Carolyn Block (1998) has noted in discussing interest in crime mapping among police, "Crime maps are nothing new. Pin maps have graced walls behind police chiefs' desks since pins were invented." Moreover, over the last decade, hot spots policing approaches have become a common staple of American policing. In a recent study, Cynthia Lum and I (2005) found that 62 percent of a sample of 125 departments with 100 or more sworn officers claimed to have adopted computerized crime mapping. Of these, 80 percent claimed to conduct hot spots analysis and two-thirds use hot spots policing as a patrol strategy. Compstat has also been adopted widely by larger American police agencies over the last decade (Weisburd, Mastrofski, McNally, and Greenspan 2001; Weisburd, Mastrofski, McNally, Greenspan, and Willis 2003). And though Compstat is an innovation that seeks to concentrate police efforts on specific goals and increase organizational control and accountability, it has encouraged geographic analysis of crime as one of its innovations.

But my position is more radical than simply advocating that police add a new strategy to the basket of police interventions. For place-based policing to

succeed, police must change their unit of analysis for understanding and doing something about crime. As Lawrence Sherman has quipped, "Why aren't we thinking more about 'wheredunit' rather than 'whodunit'?" (Sherman 1995: 37). Policing today continues to place people at the center of police practices. This is reflected in how data are collected, as well as how the police are organized. Place-based policing demands a fundamental change in the structure of police efforts to do something about crime and other community problems.

For example, police data has developed historically out of a system that was focused on offenders and their characteristics. Indeed, the addition of a place-based identifier was not initially a source of much concern in incident, arrest, or police call databases. In the late 1980s, researchers who tried to analyze the locations of crime using police databases were often frustrated by an inability to identify where a crime occurred. There were often multiple names given to similar addresses, some based on the actual address and some on the names given to stores or other institutions at that address. Such name identifiers often included scores of possible permutations, and address identifiers often failed to identify whether the address was in the south, north, east, or west of cities with such designations. Over the last decade, police

have become much better at identifying where the crime is located, in part because of significant advances in records management systems and in part because of advances in geographic information systems. But it is striking how police in most jurisdictions have failed to go very much beyond the simple identification of an address in their data systems.

In the case of arrest databases, it is common to collect data on age, gender, and often education and other demographic characteristics of offenders. But it is rare for such databases to tell us much about the nature of the places that are the context of police activities. A successful program of place-based policing would require that the police routinely capture rich data about places. We should know as much about the places that are hot spots of crime as we do about offenders who commit crimes. Such data should be regularly available to police when they decide to focus interventions on specific places. The failure to collect such data routinely, or to gain such data from other agencies, limits the ability of police to develop effective place-based policing strategies. Carolyn Block and Lynn Green (1994) have already suggested the importance of such databases in what they have called a GeoArchive.

The failures of traditional person-centered policing to develop data sources relevant



for place-based policing is also evidenced in the lack of interest of police executives in knowing where the police are. While technologies for tracking the whereabouts of police, often termed automated vehicle locator technologies, have been available for decades, not a single police agency in the country has used these technologies to try to understand the routine relationships between police patrol and crime. We need to know not only where crime is but also where the police are. This information would allow us to identify how police presence affects crime at place and to design more effective patrol strategies. The Police Foundation, with Elizabeth Groff, Greg Jones, and I, has just begun an innovative program in collaboration with the Dallas Police Department with this aim in mind. But it is in some sense indicative of the failure of police to take a place-based approach that this technology has only now begun to be applied to practical crime prevention.

The geographic organization of policing today also fails to recognize the importance of places in developing police strategies. By arranging police in large precincts and beats, the police have assumed that the common denominator of crime is found at large geographic levels. While it might be argued that precincts and beats are seldom fit for even larger geographic units such as communities, they

are particularly ill fit for place-based policing. Perhaps police should consider dividing patrol according to micro places that have similar crime levels and developmental trends over time. Such a reorganization of police around places would focus strategic thinking and resources on solving common problems. The reorganization of police for place-based policing might also take other forms, but it is clear that today's precincts or beats do not take into account what we know today about the geographic distribution of crime and its concentration at relatively small crime places.

In policing places, there must also be a shift from arresting and prosecuting offenders to reducing the opportunities for crime at place. The idea that police were too focused on law enforcement is not a new one, and indeed was a central concern of Herman Goldstein when he introduced the idea of problem-oriented policing in 1979. Goldstein and others have for almost three decades tried to influence the police to be less focused on arrest and prosecution of individual offenders and more focused on solving crime problems. But these calls have at best been only partially heeded by the police, and there is much evidence that law enforcement and arrest of offenders remains the primary tool of policing even in innovative programs (Braga and Weisburd 2006). But why should we be surprised? In a

police culture in which person-based policing is predominant, it is natural for police officers to continue to focus on offenders and their arrest.

Place-based policing provides an opportunity to finally shift this emphasis, because it places the crime place rather than the offender at the center of the crime prevention equation. It changes the central concern of police to improving places rather than simply processing offenders. Success in this context must be measured not in terms of how many arrests the police make but in terms of whether places become safer for the people who live, visit, or work in such places. As noted earlier, policing places requires the expansion of the toolbox of policing far beyond traditional law enforcement.

In this context, place-based policing requires that police be concerned not only about places, offenders, and victims but also about potential non-police guardians. If the goal of the police is to improve safety at places, then it is natural in policing places to be concerned with what Eck and others have termed "place managers" (Eck 1994; Eck and Wartell 1996). "Third party policing" (Mazerolle and Ransley 2005) is also a natural part of place-based policing. But, more generally, place-based policing brings the attention of the police to the full range of people and contexts that are part of the crime problem.

In advocating place-based policing, it is important to note that police should not abandon concern with people involved in crimes. Indeed, I am not suggesting that people should be ignored, but rather that they should be seen in the context of where crime occurs. Saying that people should not be at the center of the crime equation does not mean that they are not an integral part of that equation. The difference is in good part how the police should organize information and crime prevention efforts. Moreover, there may be some crimes that are better understood by focusing on people rather than places, and this should also be a central component of our understanding of place-based policing. Though there is as yet little solid scientific evidence that repeat offender or victim crime prevention programs are effective (Weisburd and Eck 2004), it is clear that very high-rate criminals or victims should be the subjects of special police attention.

## Conclusion

My discussion has centered on the benefits of place-based policing. As I have illustrated, basic research suggests that the action of crime is at very small geographic units of analysis, such as street segments or small groups of street blocks. Such places also offer a stable target for police interventions, as contrasted with the constantly

moving targets of criminal offenders. Evaluation research provides solid experimental evidence for the effectiveness of place-based policing and contradicts the assumption that such interventions will just move crime around the corner. Indeed, the evidence available suggests that such interventions are much more likely to lead to a diffusion of crime control benefits to areas nearby.

Research accordingly suggests that it is time for police to shift from person-based policing to place-based policing. While such a shift is largely an evolution in trends that have begun over the last few decades, it will nonetheless demand radical changes in data collection in policing, in the organization of police activities, and particularly in the overall world view of the police. It remains true today that police officers see the key work of policing as catching criminals. It is time to change that world view so that police understand that the key to crime prevention is in ameliorating crime at place.

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## ABOUT THE POLICE FOUNDATION

The Police Foundation is a national, nonpartisan, nonprofit organization dedicated to supporting innovation and improvement in policing through its research, technical assistance, communication, and professional services programs. Established in 1970, the foundation has conducted seminal research in police behavior, policy, and procedure, and works to transfer to local agencies the best new information about practices for dealing effectively with a range of important police operational and administrative concerns. Motivating all of the foundation's efforts is the goal of efficient, humane policing that operates within the framework of democratic principles and the highest ideals of the nation.

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## Harnessing Science to Policing

### Meeting Some Challenges of Evidence-Based Policing

Stephen Mastrofski

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## Evidence-based policing

Evidence-based policing is the use of the best available research on the outcomes of police work to implement guidelines and evaluate agencies, units, and officers.

Put more simply, evidence-based policing uses research to guide practice and evaluate practitioners. It uses the best evidence to shape the best practice. It is a systematic effort to parse out and codify unsystematic "experience" as the basis for police work, refining it by ongoing systematic testing of hypotheses.

*Lawrence W. Sherman (1998)*

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## Current influences on police practice

- o Craft
- o Professional traditions
- o Law and bureaucracy
- o Politics

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**Pros and cons of evidence-based policing**

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- Pros
  - Lawrence W. Sherman, *Evidence-Based Policing*. Police Foundation (1998).
  - Lawrence W. Sherman, "Social Organization of Information for Social Control." In *Crime and Social Organization* (2002).
  - David Weisburd and Peter Neyroud, *Police Science: Toward a New Paradigm*. Harvard Executive Session on Policing (2011).
- Cons
  - Mark H. Moore, *Improving Police Through Expertise, Experience, and Experiments*. In *Police Innovations: Contrasting Perspectives* (2006).
  - Malcolm K. Sparrow, *Governing Science*. Harvard Executive Session on Policing (2011).

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**Police ownership of police science (Weisburd & Neyroud, 2011)**

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- Research is a central part of police mission
- Science is relevant: focuses on core issues of policing, is reality based, & timely
- Police decisions are based on quality science
- Police education & career development are based in science
- Police organizations institutionalize research into their structures (including university participation)
- Police executives are advocates for U.S. government providing material support for research

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**Two practical ownership questions**

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- What does ownership of police science require of police leaders?
- What role should police employees play?

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**Two models of ownership**

- Stockholder
- Small business (owner-managed)
  - Low employee participation
  - High employee participation

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**Research ownership issues for police leaders**

- Developing a research agenda
- Selecting research methods
- Using and dealing with the findings

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**Developing a research agenda**

- Establishing priorities
  - Pressing issues
  - Department mission and culture
  - Proactivity desired
- Purpose of research
  - Assess program impact
  - Problem identification
  - Determine causes/consequences of a problem
- Who participates?
  - From within the department
  - From outside the department
  - Collaboration with other police agencies

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Issues in selecting research methods

- Scientific rigor required
- Costs and disruptions incurred
- Ethical issues and political challenges

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Using and dealing with findings

- Anticipate management's decision options
- Research report review
  - Check for errors
  - Resolve disagreements on interpretations and implications
- Plan for dissemination of results

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Research ownership issues for police leaders (recap)

- Developing a research agenda
- Selecting research methods
- Using and dealing with the findings

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**Role of police employees in evidence-based policing**

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- Research subjects
- Research agenda/hypothesis generators
- Problem solvers
- Conducting the research
- Using research in decision making

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**Most likely cause of undesirable results when dealing with the public**

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Cause	% of officers
Not enough information sources	95
Didn't take enough time	85
Not enough explanation to citizens	80
Not enough alternatives considered	75
Not enough citizen input	65

Source: *Results of Survey on High Quality Policing in Manassas City, Virginia (2011)*

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**Role of police employees in evidence-based policing (continued)**

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- Research subjects
- Research agenda/hypothesis generators
- Problem solvers
- Conducting the research
- Using research in decision making

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**Two key questions for effective use of scientific evidence**

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- What does the best evidence indicate?
  
- What are the limitations of the evidence?
  - Degree of confidence
  - Generalizability

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**Three recommendations to prepare police as users of science**

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- Make police science a core part of recruit academy training
- Sell science to sergeants and FTOs
- Plan a system for compliance
  - Bureaucracy (rules & standards)
  - Craft

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**Investment strategy for building evidence-based policing**

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- Short term
  - Greater emphasis on developing knowledge users
- Long term
  - Increase use of knowledge generators over time

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Preparing employees to participate in evidence-based policing

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- Education
- Training
- Motivating employees: trial project
  - Relevant to employee concerns
  - Manageable size and scope
  - Strategically selected participants
  - Well-disseminated results
  - Management response well-publicized

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The two challenges of evidence-based policing

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- How police can become more active in the production of scientific knowledge
  
- How police can become more effective users of scientific knowledge

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## Police Science: Toward a New Paradigm

David Weisburd and Peter Neyroud

### Executive Session on Policing and Public Safety

This is one in a series of papers that will be published as a result of the Executive Session on Policing and Public Safety.

Harvard's Executive Sessions are a convening of individuals of independent standing who take joint responsibility for rethinking and improving society's responses to an issue. Members are selected based on their experiences, their reputation for thoughtfulness and their potential for helping to disseminate the work of the Session.

In the early 1980s, an Executive Session on Policing helped resolve many law enforcement issues of the day. It produced a number of papers and concepts that revolutionized policing. Thirty years later, law enforcement has changed and NIJ and Harvard's Kennedy School of Government are again collaborating to help resolve law enforcement issues of the day.

Learn more about the Executive Session on Policing and Public Safety at:

NIJ's website: <http://www.ojp.usdoj.gov/nij/topics/law-enforcement/executive-sessions/welcome.htm>

Harvard's website: [http://www.hks.harvard.edu/criminaljustice/executive\\_sessions/policing.htm](http://www.hks.harvard.edu/criminaljustice/executive_sessions/policing.htm)

### Summary

We believe that a radical reformation of the role of science in policing will be necessary if policing is to become an arena of evidence-based policies. We also think that the advancement of science in policing is essential if police are to retain public support and legitimacy, cope with recessionary budget reductions, and if the policing industry is to alleviate the problems that have become a part of the policing task. In this paper, we outline a proposal for a new paradigm that changes the relationship between science and policing. This paradigm demands that the police adopt and advance evidence-based policy and that universities become active participants in the everyday world of police practice. But it also calls for a shift in ownership of police science from the universities to police agencies. Such ownership would facilitate the implementation of evidence-based practices and policies in policing and would change the fundamental relationship between research and practice. It would also increase the prestige and credibility of police science in the universities. We think that bringing the universities into police centers and having the police take ownership of police science will improve policing



and ensure its survival in a competitive world of provision of public services.

### **Introduction: The Disconnect Between Science and Policing**

Over the last two decades, the police have innovated at a rapid pace, developing new practices and policies that have reformed and changed the policing industry (Weisburd and Braga, 2006a). The police, who were once considered conservative and resistant to change, have become a model for criminal justice systems experimentation and innovation. The police have pioneered the development of new relationships between criminal justice and the public in community policing. They have crafted new strategies of crime control, introducing problem-oriented policing, hot spots policing, pulling levers policing and a host of other new strategic innovations, including the introduction of new technologies such as automatic number/license plate reading, automatic fingerprinting systems and DNA testing. The police also have experimented with new management methods in programs such as Compstat, and have integrated the new technologies into crime prevention and control through innovative crime analysis approaches such as intelligence-led policing (Ratcliffe, 2008) and with new methods of describing data such as computerized crime mapping.

In their efforts to innovate and change over the last two decades, the police have often enlisted the help of academics and researchers. In the development of Compstat in New York City, for example, academic research not only helped to define why new approaches were necessary (Bratton, 1998; Bratton

and Knobler, 1998), but police scholars like George Kelling were enlisted to help identify and refine promising police practices. Intelligence-led policing is strongly linked to academics who have called for use of advanced statistical and analytic tools in dealing with crime problems, and many police agencies have sought to enlist researchers to help them develop such tools (Peterson, 2005; Ratcliffe, 2002; 2008). Hot spots policing has its origins in basic academic research, and has been the subject of systematic scientific evaluation (Braga, 2001; Sherman and Weisburd, 1995; Weisburd, 2005). More generally, police-researcher partnerships have been a prominent feature of the policing landscape over the last two decades, and it is no longer surprising to see researchers in police agencies.

But having noted the advances in the relationship between research and practice in policing, we think it reasonable to say that despite progress, there is still a fundamental disconnect between science and policing. By “science” we mean the broad array of methods and technologies that police have confronted over the last half century. This includes advances in forensics, such as DNA testing, digital fingerprinting and other technologies meant to improve detection and identification. It also includes social science, which often has been neglected by the police, but has begun to play an increasingly important role over the last few decades both in terms of advancing crime analysis and in evaluating and assessing traditional police practices and new innovations in police strategies. By science we also mean the advancement of the use of scientific models of inquiry such as problem-oriented policing. In our paper, we will argue that

despite the advances made in the use of science in policing and in the leadership and management of policing, science has yet to move to center stage.

For example, most police practices are not systematically evaluated, and we still know too little about what works and under what conditions in policing (National Research Council [NRC], 2004; Weisburd and Eck, 2004). Indeed, the evidence-based model for developing practices and policies has not been widely adopted by police agencies. Today, as in past decades, strategies developed in police agencies are generally implemented with little reference to research evidence. Despite some examples notable for the ways in which they depart from conventional practice (e.g., hot spots policing; see Weisburd and Braga, 2006b), the adoption of police innovation has tended not to have a strong relationship with science.

Evidence-based policing (Sherman, 2002) is not the rule, and we think it is not an exaggeration to say that most police agencies have little interest in using scientific methods to evaluate programs and practices. A CEPOL<sup>1</sup> study of police research in European police agencies found that only five out of 30 countries showed a “high” value accorded to police science research. In contrast, in nearly half the countries, research was seen as being of “low” value. The CEPOL study categorized low value through two characteristics: little or no demand from police for research and police training being conducted without reference to scientific or academic knowledge (Hanak and Hofinger, 2005).

Even police practitioners who are committed to using scientific evidence recognize that the present state of practice makes a sophisticated use of science difficult in many police agencies (Jaschke et al., 2007; Neyroud, 2008; Weatheritt, 1986). Often, the introduction of research develops serendipitously — from a “bright idea” of police practitioners or researchers rather than through systematic development of knowledge about practice. There is often little baseline data from which to define an innovation, and the outcomes that are examined are usually restricted to official data measured over very short periods. Most studies of innovations are based on very simplistic methodologies, focus on implementation rather than design, and often fail to address key issues around transferability or, equally crucial, sustainability (Weatheritt, 1986). Based on an assessment of whether the idea worked, innovative police leaders try to diffuse the idea more widely in their agencies, and across agencies, without adequately having researched what the real effect was. Despite some notable exemplars, even in many innovative police agencies, innovation is more a symbolic activity than a real scientific activity.

Most police agencies do not see science as critical to their everyday operations. Science is not an essential part of this police world (Hanak and Hofinger, 2005; Jaschke et al., 2007). At best it is a luxury that can be useful but can also be done without. This can be contrasted with fields like medicine and public health and, to a lesser extent education, which have come to view science as an essential component of their efforts to provide public services (Shepherd,

2007). We recognize that the job of policing includes unique features that cannot be easily compared to other applied sciences, and that models drawn from other applied sciences, especially medicine, would have to be substantially altered to be appropriate for police science. Nonetheless, we think there are important lessons to be learned from the penetration of science into other areas of practice.

For example, can one imagine medicine today without the large infrastructure of research that stands behind medical practices and public health policies? Science is valued both by medical practitioners and by ordinary citizens. Indeed, the manipulation of science by large drug companies and others that want to increase demand for their medical products and services illustrates the value of science more generally in medical practice. In policing there is — as Jonathan Shepherd, a recent recipient of the Stockholm Prize in criminology and originally a medical researcher and practitioner has remarked — a problem with the “credibility of social science research” (Shepherd, 2007). The police do not see social science as essential to the work of police agencies. A perfect illustration of this can be found in the content of core police education and training. As Janet Chan and her colleagues’ study of learning the art of policing illustrates, there is little concern with either scientific evidence or evidence-based policing (Chan, Devery and Doran, 2003). In turn, police science is often ignored even when the evidence is unambiguous. Take for example the continued application of programs like Drug Abuse Resistance Education (D.A.R.E.) that have been shown to be ineffective but continue to be supported and implemented by police

agencies (Clayton, Cattarello and Johnstone, 1996; Rosenbaum, 2007; Rosenbaum et al., 1994).

It is not just the application of social science that has missed its mark in policing. A recent National Academy of Sciences report on forensics expresses significant concern regarding the identification and application of science in such areas as fingerprint identification and forensic odontology (NRC, 2009). The report argued that the police were too willing to rely on experts and were not critical enough in the evaluation of the underlying science of these technologies. It also highlighted that the expert scientists were failing to objectively identify the underlying weaknesses in the technologies applied. And there is also a strong relationship between the weaknesses of applying the scientific method to forensics and a lack of acceptance of social science in policing. The police, as we discuss below, have long been interested in how new technologies can be harnessed to advance police work. Yet, the police have seldom sought to evaluate how these new technologies affect policing, and more importantly whether and how they make the police more effective (Morgan and Neyroud, forthcoming). Compare this approach to the adoption of new technologies and advances in agriculture and in medicine (Gomez and Gomez, 1984; Hunink et al., 2001; Sunding and Zilberman, 2001; Weinstein et al., 2003). These innovations are not adopted widely without careful evaluation of their impacts. Such scientific evaluation is rare in policing (see Roman et al., 2009, for an important exception).

One consequence of the lack of value of science in much of the policing industry is that there is

little advocacy of such science in government. Medical research in the United States receives more than \$28 billion a year in government funding (National Institutes of Health, 2008). In the United Kingdom, medical research receives more than £600 million (\$981 million) of government funding annually (House of Commons, 2008). Research on dental care in the United States has a federal budget of more than \$389 million per year (National Institute of Dental and Craniofacial Research, 2007). Education research received \$167 million in the United States in 2009 (U.S. Department of Education, 2009). However, the National Institute of Justice (NIJ), the primary U.S. funder of research in criminal justice, had a total budget of only \$48 million in fiscal year 2009 and a budget for research and evaluation (in which its policing division is located) of only \$13.7 million.<sup>2</sup> The primary funder of crime research in the United Kingdom, the Home Office, has a budget for research of only £2 million (\$3.3 million) (Home Office, 2008). Although there is evidence that police associations such as the International Association of Chiefs of Police (IACP) and major city chiefs have objected to cuts in research budgets in the past, we do not think that such efforts have been consistent or sustained. This can be contrasted with the vocal and intense responses of the police to reductions in police numbers and equipment (Galloway, 2004; Koper, Maguire and Moore, 2001).

We began this paper by focusing on the responsibility of policing to step up its use and ownership of science. However, we also think that the academic support for policing has, for the most part,

failed to meet the needs of policing. Indeed, to focus only on the police industry when noting the disturbing absence of a large infrastructure for science in policing neglects the failure of academic police scholars to make themselves relevant to the everyday world of the police. Academic research is generally divorced from the dynamics of policing. The police operate in a reality in which decisions must be made quickly, and issues of finance and efficiency can be as important as effectiveness. But academic policing research generally ignores these aspects of the police world, often delivering results long after they have relevance, and many times focusing on issues that police managers have little interest in.

Real issues in policing often have little salience in the halls of universities. In medicine, clinical involvement is seen as an important part of the research enterprise, and clinical professors are well integrated into medical science. But in policing, academics would be unlikely to advance in universities if they nested themselves in police agencies to address specific problems such as burglary or car theft, and it is rare for clinicians to have an active research role in universities.<sup>3</sup> As such, the everyday problems of policing have little status in the universities. In return, in general, the police have tended not to insist on graduate and post-graduate educational and professional standards, or at least have been discouraged from doing so by police unions and other interested political forces, and this has distanced the police even further from academia (Carter and Sapp, 1990; Roberg and Bonn, 2004).

We believe that a radical reformation of the role of science in policing will be necessary if policing is to become an arena of evidence-based policies. We also think that the advancement of science in policing is essential if police are to retain public support and legitimacy and if the policing industry is to alleviate the problems that have become a part of the police task. Below, we outline a proposal for an approach that would radically alter the landscape of science in policing. We begin by assessing the current situation and the present role of science in police agencies. We note the important advances over the last few decades but also the limitations of present approaches. Finally, we focus on proposals for a new paradigm that changes the relationship between science and policing.

This paradigm demands that the police adopt and advance evidence-based policy and that universities become active participants in the everyday world of police practice. But it also calls for a shift in the ownership of police science from the universities to police agencies. Such a shift would allow police science to become an integral part of policing and in this way would enable the development of evidence-based approaches for the identification of effective and cost-efficient practices and policies. This is essential if the science of policing is to provide evidence that its practices improve public safety. It is also essential if policing is to gain legitimacy and secure investment in an increasingly skeptical world of public services in which the competition for public finance is growing ever more acute (Ayling, Grabosky and Shearing, 2009).

## **The Present Reality: The Failure to Own Science and Its Implications**

Science in policing has a long history as it relates to forensic evidence and police laboratories for analyzing such evidence. Police focused early on the use of blood analysis, gunshot residues and pathology in improving investigations. These tools were developed in collaboration with traditional science, mostly medical science, and are being continued with the development of DNA testing and other new investigative approaches.<sup>4</sup> Police communications and geographic information systems are other areas where science has influenced policing and continues to change the nature of police operations. And there is no question that technologies related to the use of force such as weapons or vests to protect police officers have benefited from the involvement of science in the policing world.

In many ways, the use of such traditional science as DNA testing and the development of bullet-resistant vests and less-lethal weapons provide an important model for science in policing. Police agencies have embraced these technologies, and the federal government has often provided significant funding for their development. Nearly the entire NIJ budget in the last few years has reflected such developments, with DNA testing being the single most prominent federal investment in research that has been carried forward by the agency (NIJ, 2008). The same could be said for the U.K. government which invested heavily in the “DNA expansion program” from 1999 to 2007 (Williams and Johnson, 2008). What some might call “hard sciences” — the sciences of engineering, biotechnology and medicine

— have developed rapidly in policing and have been widely accepted by the policing industry. At the same time, a recent National Research Council (2009) report on the use of forensic evidence suggests that even in this area of science, the police have often failed to use an evidence-based model in which standards are developed with clear scientific criteria.

The adoption of technology by police agencies has been a type of “black box” — police have accepted such technologies but have generally not assessed or evaluated them. They bring in new equipment or new technologies because they work in theory but know little about how to use such technologies so that they work best. For example, despite major investment in DNA testing, there has been to date only one large field trial on the impact and cost-effectiveness of DNA evidence on police investigations and that trial was limited to property crime (Roman et al., 2009). Do new weapons make policing safer or more effective? Will DNA testing be cost-effective for the average police agency? Can automobile vehicle locator systems be used to increase the value of police patrol? These questions, which seem so obviously central to the question of adoption of new technologies, are seldom examined in policing. The police, in this sense, have often been reactive to the technologies that are brought to them and have seldom played a role in developing those technologies to enhance the effectiveness and efficiency of policing. And as the NRC report makes clear, in many areas, the police have accepted claims of scientific credibility with little skepticism.

One area where this involvement is greater is crime analysis. Most larger police agencies now have crime analysis capabilities that include not only simple tabular statistical description but also more sophisticated algorithms for identifying concentrations and patterns of crime, often relying on geographic information systems and spatial statistics. Most police chiefs can now quickly obtain answers regarding the distribution of crime across time or space, and most have come to expect that such data will be used to do something about crime. In this sense, science in crime analysis has become an integral part of police agencies (Weisburd, 2008). In the U.K. in particular, a number of partnerships have been developed between universities and the police as illustrated by the National Intelligence Model (Grieve et al., 2008). But it is important to note that in most police agencies there are still problems achieving integration between crime analysis and the everyday world of policing, and still less involvement between scientific work in universities and the work of crime analysis in policing.

Compare this with laboratories in major university hospitals where the skills of scientists are not only cutting-edge but are also integrated into a larger world of science. Major university hospitals expect their scientific staff to be conducting research that is published in the best scientific journals. They encourage them to look for new “discoveries” in their clinical work, and to follow standards set by national scientific bodies. Police departments do not, on the whole, encourage their scientific staff to publish in scientific journals in criminology; indeed, they generally

discourage them, sometimes citing the fact that adverse results might damage the reputation of the department.<sup>5</sup> Science in this sense is not a part of large policing centers. The implication of this is that the scientific quality of crime analysis units is often relatively low.

It might be argued that police do not have the resources to develop science of this type in their agencies. Of course, one reason for this is that police do not place a high priority on science, and thus there is little support for funding for police science on the part of government. It might be argued as well that this challenge is being overcome in policing with the development of police-researcher partnerships. Such partnerships have played a role in raising the profile of science in police agencies and in bringing new technologies and skills, especially in crime analysis. The roots of police-researcher partnerships go back to the 1970s with the relationship of the Kansas City Police Department, Mo., to the Midwest Research Institute. The New York City Police Department (NYPD) also had an early collaboration with the Vera Institute of Justice. The Vera Institute-NYPD collaboration can be seen as a model not only because of the serious research that was conducted but also because the police invested in this partnership over a long period by providing the Vera Institute with a yearly grant for technical assistance (Bloom and Currie, 2001).

The Vera Institute model is unusual; partnerships are more commonly a product of funding by state or federal agencies. The 1990s saw an explosion of such funding opportunities, and the research partnership model became a common part of the policing landscape. The origins of

these partnerships supported by government can be found in the early 1990s when then Director James Stewart of NIJ funded a series of collaborations in which police agencies and researchers both received funding to enhance research on the police (Garner and Visher, 2003). The Drug Market Analysis Program, which led to a series of experimental studies of anti-drug strategies, introduced collaborations in Jersey City, N.J. (Weisburd and Green, 1994; 1995), Pittsburgh (Olligschlaeger, 1997), Hartford, Conn., San Diego, and Kansas City, Mo. (Herbert, 1993). Importantly, these programs not only aided the police in the development of innovative strategies such as hot spots policing, they also produced a series of high-quality research products about what works in policing (Taxman and McEwen, 1998).

The partnership model was further reinforced with the U.S. Crime Bill of 1994 and the creation of the Office of Community Oriented Policing Services in 1994. Following upon earlier successes, the federal government now began to fund an array of different types of partnerships between police and scholars, paving the way for the acceptance of research in police agencies and recognition of the importance of policing as a focus of academic study. It became common to visit police agencies and see criminologists “in the building.” Many agencies began to rely on the advice of scholars and looked to researchers to help them develop and assess programs. Police scholarship developed at a quick pace with the number of articles on police science growing rapidly in this period (NRC, 2004). More importantly, the study of policing by police scholars became a field of greater interest with many more scholars participating.



In the United Kingdom, partnerships between the police and researchers also began to have influence in the everyday world of policing. Ken Pease's groundbreaking Home Office research on repeat victimization in Kirkholt and Manchester showed how scientific evidence could change police practices, in this case by recognizing that a recent victim is very likely to be victimized again (Pease, 1991). The diploma/masters in applied criminology at Cambridge, which included practice-based research, was required for senior law enforcement managers for a brief period in the late 1990s.

Although the 1990s saw a developing relationship between academic police researchers and the police, the role of science in police agencies did not fundamentally change during this time. The police-researcher partnerships generally were not sustainable after the large influx of federal funds declined. Simply put, the partnerships did not establish themselves as critical enough to the policing mission for the police to take on the partnerships on their own. As such they were arguably nice to have but could be done without. Science had not established itself through the partnerships, perhaps in part because the partnerships themselves often did not produce good science or science very relevant to police agencies. For most police agencies and academic researchers, the partnerships were an opportunity to increase resources for doing what they traditionally did. With some important exceptions we note below, neither the police nor academics really took ownership over these collaborations. Rather the police offered scholars the prospect of doing

research with the support of federal dollars, and researchers offered police consultation services paid for by the government.

Throughout this period, the science of police research remained a province of the universities and not police agencies. By this we mean that the questions asked generally had their origins in the questions of researchers, and not necessarily in the needs of the policing industry. The ownership of such research was not in the agencies that were the sites for its development, but in the academic institutions and among the academic researchers that sponsored them. Importantly, some of these projects, like the Drug Market Analysis Program, developed police practices in response to police and government definitions of critical problems. The pulling levers approach (Kennedy, 2006) developed by Harvard University's Kennedy School is a more recent example of this important trend. However, more common is the perception of many police that the real beneficiaries of such research programs are the researchers and not the police. And why they would not they feel this way, considering that the research findings are often disseminated long after the sites have lost interest in the questions asked and usually after new administrators that have little contact with the original research are in office? Indeed, the need for academics to publish in peer-reviewed journals that are at best remote for most practitioners and in a style that is not readily transferable to the policing workplace has meant that much useful research might just as well have been buried in a time capsule.

Finally, a deeper and more fundamental reason for the disconnect between police science and police practitioners lies in the fundamentals of police education and training. As we have suggested above, science is normally not central to police education and training. Neither CEPOL's recent survey (Hanak and Hofinger, 2005) nor Janet Chan and colleagues' seminal study of student officer training (Chan, Devery and Doran, 2003) shows much evidence of a professional and evidence-based approach to learning. Although it may be critical for police officers to have a good working knowledge of the law, that this is to the exclusion of a good working knowledge of the theory and evidence for its effective practice strikes us as a major factor in the failure of science to establish itself in policing. Moreover, the limited progress of police to create accredited standards for education prior to joining the force and throughout the careers of police officers has reinforced the realities of policing as a "blue collar job" (Reiner, 2000) rather than a profession supported by a credible corpus of knowledge. This, in turn, has further distanced police from the importance and relevance of police science.

### **The Costs of Failing to Own Police Research**

Our discussion so far suggests the extent to which the police have so far failed to take ownership of police science. Even in the case of technology, the police have, on the whole, been reactive to science and have allowed outside institutions to dictate what science would tell them. As a consequence, policing often remains outside the sphere of evidence-based policy. Although it is fair to say that there are limitations to the evidence base, we would suggest the police do not tend to place such

evidence as the central rationale for policy decisions. We think this may have serious consequences for policing in the future. Such consequences are already evident in the growing financial crisis that is facing many policing agencies (Gascón and Foglesong, 2010). Policing is becoming increasingly expensive as a public service, and without a scientific base to legitimize the value of police, it is likely that public policing will face growing threats from other less costly alternatives, like private policing, or that many police services now taken for granted will be abandoned (Bayley and Nixon, 2010). Without scientific evidence and a more scientific approach, police are going to be increasingly vulnerable to politicians and advocates pressing either populist approaches or budget reductions in favor of other services that are able to present better evidence-based business cases for public investment.

A reality in which the police see little value in academic research is also a reality in which there will be few serious scientists who are interested in or know about the police. This is to some degree natural, since it would be surprising if large numbers of scientists at the top of their profession became interested in the police at the same time that there was little prospect for serious scientific research on the police. There is today, compared to other major public services, little funding for research on policing, and this means that young scientists will be unlikely to see policing as an area of study with promise. This is a vicious cycle: a lack of priority accorded to science translates into limited investment and kudos attached to police science and, in turn, into limited opportunities and career prospects for scientists interested in policing research.

An interesting implication of these trends for academic criminology more generally is that police science is a relatively low-status area of specialization within the discipline of criminology and criminal justice. Policing journals are generally of lower quality as compared with the main journals in the field, and whatever their quality, they are ranked among the lower status outlets for academic papers.<sup>6</sup> It is ironic that an area of study with tremendous policy importance and with significant implications for public health and safety remains an area of low academic status in the scientific discipline in which it sits. But in a sense this is not surprising, because scientific study of policing is not integrated nor valued in the police world, and accordingly it has not gained advantage from what would seem its most important strength — its potential as a policy science.

Perhaps the most important cost of the present reality is that there is a gap between scientific research and clinical practice. Jonathan Shepherd (2004:15) argues that “[l]ike policing, medicine is both an art and a science. But the extent to which police services are based on scientific evidence of effectiveness is much lower than in medicine, where there are more than 300,000 references to field experiments and more than 4,800 published reviews.” Shepherd’s statement is if anything overly conservative, since there are only a handful of reviews of scientific evidence in policing and at most a few dozen experimental field trials.<sup>7</sup> Clinical practice in policing has little scientific guidance and though much more is known today than in earlier decades (NRC, 2004; Weisburd and Eck, 2004), what is most striking about policing

is that we know little about what works, in what contexts, and at what cost. Does it make sense for an industry that spends \$43.3 billion a year in the U.S. alone on personnel, equipment and infrastructure (Hickman and Reaves, 2006) to spend less than \$10 million a year on research? Does it make sense for large police agencies that have budgets of many billions of dollars to have no budget for the development of research on what the police do? One might argue that the cost of research should not be borne primarily by local police agencies, but it seems to us unreasonable that such agencies that are equivalent to large medical centers do not see themselves as responsible for advancing and testing their practices in a scientific framework.

### **Toward a New Paradigm: Police Ownership of Police Science**

How can we move police science to a central place in the policing industry? What is required for policing to become an evidence-based profession? Our answer to these questions is surprisingly simple, but we suspect it will nevertheless be challenging for both police practitioners and academic researchers. For police science to succeed the way science has in other professions, it must move from the outside to the center of policing. Scientific research must become a natural and organic part of the police mission. Science must become a natural part of police education, and police education must become based in science. Science in policing must answer questions that are critical to the police function, and it must address problems that are at the core of policing and address the everyday realities that police face.

The answers of science must be timely for the police. Though science at times cannot be rushed, it is also true that a science that fails to produce answers in a timely fashion cannot be relevant to a profession that works in the real world.

Police science must “make the scene” and become a part of the policing world. Police involvement in science must become more generally valued and rewarded. For that to happen, the policing industry must take ownership of police science. Police science is often irrelevant to the policing world today because it is not part of the policing enterprise but something external to it. To take ownership the police will have to take science seriously, and accept that they cannot continue to justify their activities on the basis of simplistic statistics, often presented in ways that bias findings to whatever is advantageous to police. We accept that this is not a straightforward challenge. As Sir Ronnie Flanagan (2008) identified in his review of policing in the U.K., policing is a high-risk environment and operates in a highly political context, in which reporting failures or presenting complex results can be uncomfortable territory. Both authors have experience of debates with chiefs about the difficulties of embarking on scientifically researched pilots that may report adverse results. But would a director of a major medical center be comfortable arguing against additional research on a major public health problem like Sudden Infant Death Syndrome because it might show that present treatments in the hospital were ineffective? If not, why should the continuation of a large public program to reduce crime not be considered similarly? As Joan McCord (2003) has observed, major social programs can

have not only positive impacts but also lead to serious harms, just as treatments in public medicine.

The police must see science as integral to their mission both because it can help them to define practices and programs that have promise, and because it can allow them to assess such innovations in terms of how well they work, and at what cost. Evidence-based practice is becoming a key component of public institutions in medicine, education and government (Sackett et al., 2000; Sanderson, 2002; Slavin, 2002). In this regard, education provides a particularly instructive example for the policing industry. Education, like policing, operates in a world of decentralized and independent agencies. And before the turn of the 21st century, large education programs were seldom subjected to evaluation, and there was little federal investment in high-quality experimental field trials (Cook, 2001). However, in fiscal year 2009, just seven years after the establishment of the Institute of Education Sciences in the U.S. Department of Education, the federal budget for high-quality research reached \$167 million, with a fiscal year 2010 request for \$224.2 million (U.S. Department of Education, 2009). Evidence-based science has grown exponentially in education. We see no reason why such growth would not be possible in policing. We would argue that if the police choose to invest in the evidence-based science movement, they would enhance the value and reputation of the profession in the public sphere.

In this context, it is reasonable for the police to expect that government will play a key role in developing police science. One missing component of police science today is large public research

institutes that can play the leadership role in advancing research about police practices. In the 1970s, the government and foundations in the U.S. developed such institutions as the Police Foundation, the Police Executive Research Forum, and the research arm of the International Association of Chiefs of Police. But, whatever the many successes of these institutes in the development of police science, they cannot take on the central role of government entities such as the National Institutes of Health or the Institute of Education Sciences. There is clearly a need for a large government agency that would play a central role in police science. Such an agency could also provide much needed guidance as to standards for police agencies, license and accredit police practice, require continuous professional development, and perhaps most importantly hold agencies that continue to use ineffective or harmful practices accountable. The National Police Improvement Agency (NPIA) in the U.K. has been following this approach for its first three years, suggesting that our idea is not far-fetched. However, its emergence has not been without friction, and the new coalition government has decided to phase the agency out, sharing its functions with a range of new bodies. It is yet to be seen whether the progress made can be sustained through transition and through budget cuts.

But such an agency could not on its own create the kind of police science we are talking about, especially in the U.S. where policing is decentralized across thousands of independent agencies. For an elite and relevant police science to develop, police agencies will also have to take

clear ownership over police science. This means that police agencies will have to prioritize science, and in doing so they will have to include science in agencies and advocate for science in government. To what extent do police executives today see their role as advocating for increased funding for police science? Is it common to see police executives on Capitol Hill or in national parliaments demanding larger budgets for police research? It is not, in part because police executives generally do not see police research as a key part of their responsibility. They have tended to see academics and universities as responsible for advocating for research. Of course, from the perspective of government, there is little reason to give money for police science if police practitioners do not themselves prioritize such science and its application to practice.

There are some good examples which lend support to our arguments. There are already indications of agencies that are taking the lead in this aspect of ownership of police science. In the San Bernardino Valley in California, for example, police chiefs have banded together to seek public support for an evidence-based research center in their communities that would conduct reviews of scientific evidence for the agencies and conduct evaluations of new programs. In Redlands, Calif., Chief Jim Bueermann has hired an in-house criminologist and invested in master's-level criminology for key middle managers. Commissioner Ramsey, in Philadelphia, has commissioned Temple University to conduct field trials on hot spot patrols. In the U.K., three police agencies, Manchester, West Midlands and

Staffordshire, funded by NPIA, have embarked on randomized control trials of key aspects of practice. These are key developments but they are still too reliant on innovative chiefs and government support. Government support for police research is as critical to police science as federal support of medical research is to medicine. But recognition of the value of police science also means placing it on the list of financial priorities of police agencies.

For this police science to succeed it must be a “blue chip” science. Universities must become an important part of police infrastructure. It is instructive to remember that hospitals were not always integrated with major university centers. Indeed, in the early 19th century the integration of universities and hospitals was a major innovation. Tenon (1788) pioneered this innovation by pointing out that hospitals were like butcheries and that medical training and research needed to be brought into the medical centers.<sup>8</sup> Note that innovators did not remove medical research from the hospital, but rather sought to bring the “universities into the hospitals” (Bonner, 2000). In this same sense we must bring the universities into police centers. Again, there are important examples of such programs already developing.<sup>9</sup> In Providence, R.I. (with John Jay College of Criminal Justice) and Alexandria, Va. (with George Mason University), new partnerships between police and researchers are developing that build on the university medical center model and that have been initiated by the partners rather than federal funding agencies.

A more general indication that such trends have already begun can be found in the Universities’

Police Science Institute at Cardiff University in the U.K. The Institute, according to the press release at its founding, represents a “collaboration between South Wales Police, Cardiff University and the University of Glamorgan with the aim of increasing professionalism in the police service. It is the first institution of its kind, integrating police research, policy and operations” (Cardiff University, 2007). Although time will tell whether these new university medical center models will be successful, they represent an element of the trend that we are suggesting is necessary to advance police science. We think more generally that there should be “clinical professors” of policing, and even of police specialties like burglary or homicide investigations. There should as well be “practitioner-scientists” who are supported by and located in police agencies. But this would mean that the universities would have to value police practice and reward scholars for advancing such practice, and police agencies would have to accord greater recognition to science and reward police officers involved in science.

Another change that will likely have to occur if the paradigm we are advocating is to succeed is that training of police and police researchers will need to take place, at least in part, at university policing centers. In medicine, practitioners and researchers are trained in the same university teaching hospitals. Jonathan Shepherd argues that a major impediment to the development of crime science is the fact that practitioners have little understanding of science, and scientists little understanding of practice (Shepherd, 2001; see also Feucht and Innes, 2009). He advocates for a major change in education for police and police researchers and the

introduction of a university hospital model for policing. We think this proposal has much merit and would play a major role in putting police research in police agencies so that it is connected to the real world of policing. Of course, there are significant impediments to such a model. Many police agencies still only require a high school degree for employment. Even though there has been a call for decades for a bachelor's requirement in policing both by scholars and police executives (Carte and Carte, 1973; Carter and Sapp, 1990; Roberg and Bonn, 2004), the resistance of police unions will make it difficult to implement this change generally anytime soon. Again, we think it short-sighted on the part of unions to resist a college education requirement, both because the new realities of policing demand greater education and because the relatively higher salaries of young police officers make their educational requirements inconsistent with those in other professions.

But more generally, the movement of at least some components of police science education into police agencies would facilitate the changes we are suggesting. The police and police scientists must have shared understandings not only of the realities of police work but also of the requirements of evidence-based policy. It is difficult to develop a high level of police science when police officers generally have limited understanding of what science is and what it requires and, most importantly, how they should assess the judgments of science against their professional intuition. Similarly, when academic researchers have no real understanding of the everyday

problems of police and the realities of policing, it is hard to imagine that they will develop valuable research about policing or research that is translated into practice in the policing world. In short, we need to see the development of the sort of shared academic-practitioner infrastructure that is an accepted part of medicine and education: websites and publications that are jointly used by and contributed to by academic and practitioner users; a culture of continuous professional development, supported by accreditation, that encourages practitioners to engage with the evidence and contribute more of their own; rewards and recognition in policing that showcase high-quality evidence-based practice; and the role of chief scientific officer, broader than forensics and embracing all aspects of the application of science to the development and deployment of policing.

Finally, there is no question that the measures of success of police agencies will have to be changed if police science is to be accorded a high priority within the police. Today, there is limited pressure on police executives to show that their policies and practices are evidence-based. Compstat represents perhaps the only major management innovation in policing that succeeded even in part in putting outcomes, and especially crime outcomes, at the center of evaluation of performance in policing. Although Compstat was not evidence-based, it was performance-based and was widely adopted across American police agencies. The development of Compstat argues strongly that the police as an industry do care about showing that their practices work. The shift



we are suggesting would place science as a key component of such evaluation.

Our vision of the changes from the current to our new paradigm can be summarized in the table below.

Instead of being incidental to change and development in policing, we envisage science at the heart of a progressive approach to policing. From the very beginning, recruits to the organization would be inducted and trained within a scientific framework. Although knowledge of the law is a critical component of effective policing, our recruits would understand the evidential base not only of legislation but also of the most effective strategies to harness the law for the betterment of society. They would learn that, as professional police officers, there would be a constant expectation that they would contribute to the expansion of knowledge through their own research and field

experimentation, an expectation strongly reinforced by an informed and committed leadership that understands that knowledge drives improvement in policing, just as it provides better medicine, teaching and forensic provision. Throughout their careers, our officers would be constantly exposed to the challenge of excellent teaching from police universities, at which the very best of their number would hold posts as clinical professors. The constant cycle of learning and improvement would be supported by the commitment of a significant percentage of the organization’s budget, in the firm and committed belief that excellence is a product of knowledge and constant, systematic challenge and research.

We would, equally, expect a seismic shift in the world of universities and the academic infrastructure supporting policing. As the police move up a gear and prioritize science, we would expect to see police science move up the academic league.

**Changing to a Science-Based Policing Paradigm**

	<b>Old Paradigm</b>	<b>Science-Based Policing</b>
Education and training	Based around legal knowledge and work-based learning.	Founded in science, linking scientific knowledge with practice and continual professional development.
Leadership	Leaders see science as useful when it supports initiatives, but an inconvenient truth when it does not.	Leaders both value science and see it as a crucial part of their own, their staff and their agencies’ development and essential to the agencies’ efficiency, effectiveness and legitimacy with the public.
Academic-police relationship	Separate and distinct institutional and professional structures.	University police schools combining both teaching and research, with strong institutional links and personnel exchange with local police agencies.
Development of practice	Practice develops by individual initiatives and political mandates.	Practitioners and agencies are committed to constant and systematic research and evaluation of practice.
Investment in research	A limited national and local or individual commitment to evaluating specific initiatives.	A committed percentage of police spending devoted to research, evaluation and the development of the science and research base which is framed within a national (and possibly international) strategy to build the knowledge base over the medium to long term.

The next generation of police scientists would contain many practitioner-academics, with the first “clinical professors” of policing paralleling their colleagues in medicine. We would expect the rapid development of the tools of translation to ensure the knowledge developed through scientific research is persistently disseminated into practice. George Mason University’s Evidence-Based Policing Matrix (<http://gemini.gmu.edu/cebcp/Matrix.html>) and NPIA’s Police Online Knowledge Area (<http://www.npia.police.uk>) are early standard bearers of such approaches. But we would also expect that the next generation would publish their findings in an accessible form in publications of NPIA, NIJ, IACP, the Police Executive Research Forum and the Police Foundation in tandem with submission to peer-reviewed academic journals.

### Conclusions: Owning Police Science

We have argued in our essay for the importance of the adoption of the norms of evidence-based policy in policing and of the police taking ownership of police science. Such ownership would facilitate the implementation of evidence-based practices and policies in policing, and would change the fundamental relationship between research and practice. It would also fundamentally change the realities of police science in the universities. We believe that such a change would increase the quality and prestige of police science. It is time to redefine the relationship between policing and science. We think that bringing the universities into police centers, and having the police take ownership of police science will improve policing

and ensure its survival in a competitive world of provision of public services.

### Endnotes

1. The European Police College (<http://www.cepol.net>), which is an agency of the European Union and based at Bramshill in Hampshire, U.K., is cosituated with the National Leadership campus of the National Police Improvement Agency.

2. Author’s personal communication with Thomas E. Feucht, Executive Senior Science Advisor, National Institute of Justice, Feb. 3, 2010. It is important to note that this amount represents a significant increase in funding compared with prior years (e.g., in fiscal year 2006 only \$10.7 million was spent on social science research).

3. The idea of “embedded researchers” has recently been advanced by Joan Petersilia, a leading corrections researcher in California. Professor Petersilia was called upon by Governor Schwarzenegger to reform the correctional system through a new role as Special Advisor for Policy, Planning and Research. She argues that it is critical for criminologists to become nested in the correctional system if they are to create change (Petersilia, 2008).

4. In the United Kingdom, the rapid growth of forensics came after the 1962 report of the Royal Commission on Police.

5. One of the authors is the editor of the *Oxford Journal of Policing*, which is committed to encouraging practitioners to publish on their work.

6. *Policing: An International Journal of Police Strategies and Management* is the only policing journal to receive an impact factor score from Thomson's Social Science Citation Index. It ranks 27th out of 29 criminology and penology journals.

7. The authors could identify only 22 randomized experiments related to policing. (See also <http://gunston.gmu.edu/cebcp/Matrix.html>.)

8. The authors are indebted to Jonathan Shepherd for pointing to Tenon's observation.

9. There are also examples of earlier attempts to develop such models (e.g., see Weiss and McGarrell, 1997).

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This paper was written in support of the Executive Session on Policing and Public Safety at the Kennedy School of Government and is intended to stimulate discussion among practitioners and policymakers on the development of more evidence-based, scientific approaches to policing.



## Members of the Executive Session on Policing and Public Safety

**Chief Anthony Batts**, Oakland Police Department

**Professor David Bayley**, Distinguished Professor, School of Criminal Justice, State University of New York at Albany

**Dr. Anthony Braga**, Senior Research Associate, Lecturer in Public Policy, Program in Criminal Justice Policy and Management, Kennedy School of Government, Harvard University

**Chief William J. Bratton**, Los Angeles Police Department

**Chief Ella Bully-Cummings**, Detroit Police Department (retired)

**Ms. Christine Cole** (Facilitator), Executive Director, Program in Criminal Justice Policy and Management, Kennedy School of Government, Harvard University

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Learn more about the Executive Session at:

**NIJ's website:** <http://www.ojp.usdoj.gov/nij/topics/law-enforcement/executive-sessions/welcome.htm>

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John Kapinos, *Fairfax County Police Department*  
Cynthia Lum, *George Mason University*

**INCORPORATING RESEARCH INTO  
PLANNING AND DEVELOPMENT**

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**Research evidence in policing**

*EVERY evaluation study in the  
Evidence-Based Policing Matrix involved  
some type of relationship between a law  
enforcement entity and university or  
other researchers.*

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**Evidence-based policing requires:**

- A strong, consistent, and mutual relationship between researchers and practitioners.
- Creating a learning and feedback loop.
- Institutionalizing aspects of each into the other.

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## The FCPD – GMU Partnership

- History and importance of connections
- Early exchanges and agreements
- Multiple projects (funded/unfunded)

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## Types of exchanges and projects

- NIJ-sponsored License Plate Recognition Experiment and Web Portal
- Unfunded graduate student projects
- NIJ-sponsored Technology Project
- BJA-sponsored Matrix Demonstration Project
- Grant work
- General exchanges

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## Understanding researchers' needs

- To learn about policing.
- To learn about effectiveness of interventions.
- To train self and students in field research.
- To obtain practical meaning for everyday work.
- To advance or “reform” policing.
- To produce products for advancement.

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### Understanding law enforcement needs

- To study and test the effectiveness of agency programs and initiatives.
- To gain insight into true “best practices” in policing.
- To enhance research capacity.
- To gain opportunities for career development for staff.

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### Challenges to law enforcement

- Institutional resistance to evaluation and change
- Distrust of academic research
- Need for quick, definitive answers to questions
- Research process may be somewhat disruptive to operations

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### Challenges to researchers

- Lack of institutional rewards
- Field research is time-consuming and often unfunded
- Research may not be meaningful to agency
- Difficult to maintain fidelity of studies
- Expectations not met (both researchers and practitioners)
- Lack of understanding of complexities of policing

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## Benefits to universities

- ◉ Knowledge: which contributes to the business of the university (teaching, mentoring, research, outreach, skill generation, developing the discipline)
- ◉ Public contribution: Especially for practice-oriented universities, it contributes directly to our philosophy and goals.
- ◉ Financial: Research grants are the primary support for many at the university.

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## Benefits to police agencies

- ◉ Can get some real answers to questions
- ◉ Opportunities for quick feedback
- ◉ Ability to attach questions to public surveys
- ◉ Exposure for the agency
- ◉ Opportunities for agency members

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## Managing a good relationship

- ◉ Complete and implement an MOU
- ◉ Designate primary POCs
- ◉ Start small and work up
- ◉ Communicate frequently!
- ◉ Get agency members involved
- ◉ Generosity and open-mindedness

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## Elements of a good MOU

- ◎ Statement of purpose
- ◎ Delineate roles and responsibilities
- ◎ Procedure for selecting projects
- ◎ Procedure for funding application
- ◎ Process for troubleshooting
- ◎ Immediate feedback mechanisms
- ◎ Confidentiality agreement

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Some final advice on

## Translating research into practice

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## Strategize, like anything else.

- ◎ *Thinking* about the “why” and “how”
- ◎ *Investing* in required infrastructure
- ◎ *Identifying levers* to shift culture
- ◎ Figuring out how to institutionalize a research finding into everyday practice

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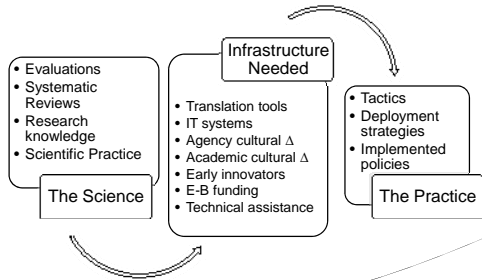
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## Institutionalizing evidence into practice



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## Build the capacity for evaluation

- Information technology – need a strong system for recording and managing information.
- Crime analysis capability.
- Experts inside and outside of agency that understand research and evaluation.
- Obtain the knowledge.

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## Strategize on how to adjust culture



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**Five areas for institutionalizing evidence**

- 1. Deployment: Tactics and strategies
- 2. Accountability systems: promotions and assessment
- 3. Management and leadership: Compstat, etc.
- 4. Professional development: academy, field training, in-service
- 5. Planning: Crime analysis and statistics

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**Find “translators” and translation tools**



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# IDEAS IN AMERICAN POLICING



Number 11  
August 2009

## *Translating Police Research into Practice*

by Cynthia Lum

### Introduction

Eleven years ago, in one of the first *Ideas in American Policing* lectures, Lawrence Sherman advocated for evidence-based policing, that is, “. . . police practices should be based on scientific evidence about what works best” (1998, 2). Like other police researchers and innovative police practitioners at the time, Sherman believed that information generated from systematic or scientific research, as well as rigorous in-house crime analysis, should be regularly used by the police to make both strategic and tactical decisions.

The idea of evidence-based policing seemed logical and advantageous. Why wouldn't police tactics be based on

what we know are effective strategies that reduce or prevent crime? A number of benefits could be reaped from such a rational approach. Strategies and tactics that are generated

from information and based in scientific knowledge about effectiveness are more likely to reduce crime when they are employed. Similarly, if interventions have been

*Ideas in American Policing* presents commentary and insight from leading criminologists on issues of interest to scholars, practitioners, and policy makers. The papers published in this series are from the Police Foundation lecture series of the same name. Points of view in this document are those of the author and do not necessarily represent the official position of the Police Foundation. The full series is available online at <http://www.policefoundation.org/docs/library.html>.

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shown to have harmful effects, police policies might explicitly discourage their deployment. Evidence-based policing also seems more justifiable in supporting police practices than other, much less scientific methods, such as best-guessing, emotional hunches, or anecdotal reflections on single cases. In turn, information-based decision making can provide legitimacy, transparency, and structure to police-citizen communications and interactions, all of which are important requirements for effective policing in modern democracies.

Perhaps less obvious but equally important benefits could include advancing police information and management systems that improve efficiency. Evidence-based approaches rely on the consistent and speedy collection, management, analysis, recording, and turnaround of crime data. This reliance can force improvements in police information technology systems, which, in turn, have the potential of strengthening and making more tangible accountability systems that facilitate managerial practices, of which information is a central component. These include innovations such as Compstat, problem-oriented policing, and intelligence-led policing (see Ratcliffe 2008). Such a system seems more promising than what police leaders have previously relied upon to establish accountability—

amorphous cultural norms of quasi-military hierarchy or adherence to a reactive standard operating procedures manual.

Evidence-based policing could also have a broader impact on transforming cultural forces that strongly influence a reactive approach to police operations, which oftentimes paralyzes crime prevention efforts and change. Although its conceptualization and implementation seem scientific or academic, evidence-based policing could increase the motivation of patrol officers and supervisors in their daily activities. Reducing crime by using strategies more likely to be effective can reduce workload and make efforts more rational. Information-based approaches can also be problem oriented and require a team effort, giving further meaning, logic, and motivation to everyday routines. Evidence-based policing requires police to look outward for information as well, opening officers and command staff to different ideas and worldviews, and providing new challenges, interactions, and relationships that could make any workplace more interesting. Police culture has generally resisted change and external influence (O'Neill, Marks, and Singh 2008), and an evidence-based paradigm might aid in mollifying this resistance.

Thus, at least in theory, evidence-based policing holds much promise. Indeed, by the time of Sherman's *Ideas* lecture,

a number of innovations that reflected its principles had already been implemented or were being considered (see generally, Weisburd and Braga 2006). Examples include the diffusion of crime analysis and computerized mapping in medium to larger police agencies (Weisburd and Lum 2005); the acceptance and use of some principles of Compstat by a number of agencies (Weisburd, Mastrofski, McNally, Greenspan, and Willis 2003; Willis, Mastrofski, and Weisburd 2003; Willis, Mastrofski, and Weisburd 2007); and at least an interest and sporadic efforts in conducting problem-oriented policing and hot-spot patrol. Additionally, by the time of Sherman's lecture, Sherman, Weisburd, Mazerolle, and others had already evaluated hot-spot patrol using randomized controlled experiments (see Sherman and Rogan 1995a, 1995b; Sherman and Weisburd 1995; Weisburd and Green 1995), showing its clear advantage over existing methods of random, preventive, beat-based, reactive patrol (a conclusion recently reached by a 2004 National Research Council report). More than policing paradigms of the past, evidence-based policing and its associated tactics and tools have shown the promise of both intuitive appeal and scientific credibility.

## Pessimism Regarding Evidence-Based Policing

Despite its potential, however, evidence-based policing has not rapidly diffused into American policing. There is little indication that most American police leaders and their agencies systematically or regularly use tactics that are evidence based. Instead, they continue to rely on strategies and tactics that are widely known to be ineffective or not based on systematic assessment. Innovations in evidence-based policing and research are less the products of agency initiatives and more the result of special, esoteric, and isolated projects between researchers and agencies in funded grant situations, overtime schemes, and specialized unit operations. While there are exceptions to this generalization, those exceptions are neither agency-specific nor institutionalized and sustained.

Indeed, the best example of the absence of evidence-based approaches in policing continues to be, as David Weisburd pointed out in his *Ideas* monograph (2008), the almost complete absence of regular use of hot-spot patrol. Although agencies have answered affirmatively to using hot-spot patrol in various surveys (see Koper 2008; Police Executive Research Forum 2008; Weisburd and Lum 2005), there is little real indication that hot-spot policing is institutionalized in daily police work. The most commonly used patrol

strategies—beat-based patrol and rapid response to 911 calls—indicate that the police do the exact opposite: patrol officers continue to be assigned to random, reactive, preventative patrol within single police beats no matter the spatial distribution of crime.

Similar concerns about the disconnect between research and practice have already been voiced throughout the *Ideas in American Policing* series. When he gave the first *Ideas* lecture in 1997, David Bayley stated that “. . . research may not have made as significant, or at least as coherent, an impression on policing as scholars like to think. . . . Nor has research led to widespread operational changes even when it has been accepted as true” (1998, 4–5). Stephen Mastrofski in 1999 emphasized that the challenge was not only to generate more research about useful interventions but also “. . . to figure out how to get police to do them more often” (1999, 6).

From the perspective of a practitioner,<sup>1</sup> it is not surprising that the factors that go into the vast majority of police decisions on the street and at the level of high command are not evidence or science based. The daily activities, strategies, and tactics of the police are driven not

by analytic intelligence, crime analysis and maps, systematically collected observations, or performance measures related to crime prevention outcomes but instead by a procedural reaction to 911 calls. Further, the context of that reaction is based not in preventative principles but more informally in idiosyncrasies of the incident, anecdotes and stories, officers’ experiences, political and social crises, standard operating procedures, moral panics, political ideology, pressure-group interests, police organizational, strategic, and tactical culture, and other whims, hunches, feelings, and best guesses. More generally, decision making at the command and agency levels is often motivated by many other political and organizational considerations (Willis et al. 2007).

To break these non-evidence-based habits is a monumental undertaking involving the changing of organizational culture, structure, rules, and norms. There is also a mythology of policing that insulates and cloaks almost every aspect of the profession, distorting both officer and citizen expectations about what police can and should deliver. The principles of an evidence-based approach are not part of these expectations and beliefs about the functions and responsibilities of law enforcement. Thus, while logical, making greater use of evidence, information, and science in policing presents a major challenge.

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<sup>1</sup>The author was a patrol officer and later a detective in a large metropolitan area.

## Optimism for Evidence-Based Policing: Existing Infrastructure

Despite this seemingly negative view about the current state of science in policing, there is room for optimism. Such hope lies in the infrastructure that currently exists that can support evidence-based policing. This infrastructure includes concrete mechanisms that facilitate bridges between science and policing, as well as avenues for effective generation and use of research and analysis in policing. The building blocks of this infrastructure include:

*Early pioneers.* An initial group of scholars, police chiefs, police research organizations, and other agencies worked to develop a culture of research partnerships and exchange that helped break down barriers and stereotypes between researchers and practitioners. Research pioneers too numerous to list here worked their way into police agencies to obtain data, study behavior, and evaluate practices, while innovative police practitioners took the risk of trying new interventions and working with these researchers. Funding support from the National Institute of Justice (NIJ), such as Locally Initiated Research Partnership programs (see McEwen 1999), often made these exchanges possible. The sponsor of this *Ideas* series—the Police Foundation—played a key role in some of these partnerships,

paving the way for future research-practitioner paradigms to emerge.

*The research knowledge itself.* These partnerships resulted in a number of studies that make up the current empirical base of evidence on the impact of police interventions. In our development of the Matrix tool described below, Christopher Koper, Cody Telep, and I found ninety-two crime-related outcome evaluation studies of police interventions that employed at least moderately rigorous evaluation methods to determine if interventions work. The results of these studies provide an initial evidence base that can be used by police to develop their tactics and strategies. There have also been systematic reviews of this research that summarize findings across studies in more digestible forms (see e.g., Braga 2007; Mazerolle, Soole, and Rombouts 2007; National Research Council 2004; Weisburd, Telep, Hinkle, and Eck 2008).

*Technological advancement.* Three areas of technological diffusion into policing provide the tools needed for evidence-based policing (although with many challenges, as Manning (2008) emphasizes). They are the use of integrated information technology and sharing systems; the adoption of computerized crime-mapping programs for hot-spot and problem-oriented policing; and the employment of crime analytic packages for long-

term strategic planning. Agencies are realizing that information is central to their effectiveness and those technological tools that facilitate the collection and management of data may help reduce crime.

*Improved police-citizen relations.* Police and researchers also have the advantage of interacting at the more developed end of a difficult and disturbing history of police-citizen relations. The crises of rising crime and decreased police legitimacy in the latter half of the last century have since led the police to become more transparent, collect and distribute more information, and have greater concern about being effective and more legitimate. This is helpful to an evidence-based approach, as this environment creates opportunities and demands for more evaluative research. It also puts pressure on the police to be outcome focused, rather than solely procedurally focused, and to deliver on crime reduction, not just crime reaction.

*Increased expectations of chief executives.* Over the past two decades, job competitiveness and expectations for excellence in police leadership have both increased dramatically (Jurkanin, Hoover, Dowling, and Ahmad 2001). Law enforcement chief executives are now hired for their innovation and ability to be progressive and scientific, as well as their record of accomplishment in crime reduction, all of which



are factors aligned with evidence-based policing concepts.

*The focus of police constituent and non-governmental organizations.* Furthermore, police research groups and think tanks like the Police Foundation, Police Executive Research Forum, and International Association of Chiefs of Police have played a key role in building this infrastructure by organizing their constituents (usually police agencies and chief executives) around the idea of the importance of conducting and using research in practice. These organizations not only make research more accessible to the police but also help to shift policing discourse at the command level towards science.

*Efforts by the U.S. Department of Justice.* The U.S. Department of Justice, through the Office of Justice Programs and the Office of Community Oriented Policing Services (COPS), has funded evidence-based policing efforts that include Locally Initiated Research Partnerships, evaluations of interventions, and the development of information-based technologies. More recently, there has also been a call for more highly rigorous evaluation research in NIJ grant solicitations, including using experimental designs.<sup>2</sup> Funding resources and leadership at the federal level play important roles

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<sup>2</sup>See, for example, NIJ's 2009 solicitation for Crime and Justice Research at <http://www.ojp.usdoj.gov/nij/>.

in guiding both discourse and practice.

All of these factors contribute to the infrastructure and discourse that buttress evidence-based policing. Thus, despite pessimism about the current state of evidence-based policing, there are concrete systems in place that make such an approach a strong possibility. Given these pessimistic and optimistic views, where does this leave the cause of evidence-based policing? How might we as researchers better communicate our work to police, and how might police become more receptive to embedding research and science into their worldview, functions, mandates, accountability systems, and organizational culture?

This may be accomplished by a “phase two” of evidence-based policing: building upon the existing research-practice infrastructure by creating the mechanisms that institutionalize the use of research and systematic analysis in daily practice. Many tools and mechanisms are currently being used to leverage change, especially on the information-generating front. Crime analysis, Compstat, computerized mapping, and information-sharing technologies are but a few examples that facilitate evidence generation as envisioned by Liberman (2009). Weisburd and Neyroud (forthcoming) have also recently discussed embedding researchers within police agencies and finding ways for police to take ownership

of research and science. Rather than focus on these technological or personnel mechanisms, I examine the use of the existing research evidence itself—how to increase police awareness and use of that research and scientific knowledge. To do this, police agencies need translation tools that make research usable and meaningful.

## An Evidence-Based Matrix

One such translation tool, initially developed by Lum and Koper for crime prevention more generally (in press) and then applied specifically to policing research (Lum, Koper, and Telep 2009), is the Evidence-Based Policing Matrix. The Matrix was inspired by Rosenberg and Knox (2005), who used a three-dimensional grid with axes specified for different aspects of child well-being. The intersection of those axes created sets of descriptions by which different prevention interventions for youth violence could be placed according to how they matched the intersecting characteristics related to child well-being.<sup>3</sup> Similarly, we created a more general crime prevention Matrix (Figure 1) to determine if interventions could be mapped along common characteristics of crime prevention.

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<sup>3</sup>Developed by Rosenberg's Task Force for Child Survival and Development, Center for Child Well-Being, Decatur, Georgia (see <http://www.taskforce.org>).



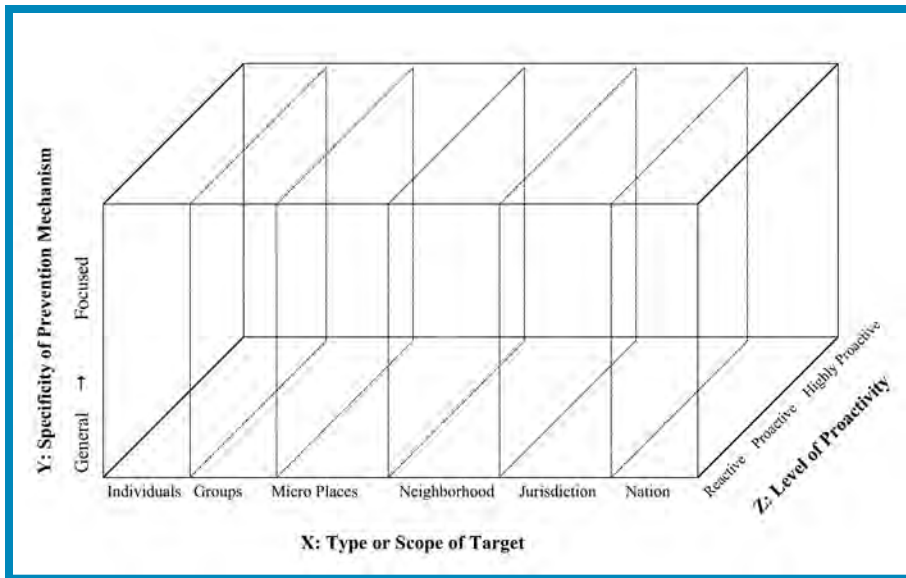


Figure 1. A Matrix for Crime Prevention Interventions

The three dimensions we chose, which are common in describing crime prevention interventions, are the type of target, the specificity of the prevention mechanism, and the level of proactivity a strategy exhibited. Although other dimensions could also be applied,<sup>4</sup> we felt these three were the most frequently used in the discourse of both practitioners and researchers, and presented a common language between the two (given that this is a translation tool). For instance, the X-axis indicates the type or scope of the target of an intervention and is the dimension of crime prevention programs in which both researchers and

<sup>4</sup>For example, a “legitimacy” intervention might be considered, which measures the level of challenge an intervention might pose in democratic society, despite its effects on crime outcomes.

practitioners are most likely to frame their discussions. This can range from tactics that focus on specific types of individuals such as domestic violence offenders or burglars, to groups such as gangs and co-offenders, to small places like street blocks, to larger areas such as neighborhoods or police beats, or even bigger jurisdictions such as cities, states, and nations.

The Y-axis represents the level of specificity of an intervention and its goals, from general to focused. General tactics are most common and have broad deterrence goals, but do not target specific crimes, people, or mechanisms of crime. Hot-spot patrol in a small location, if using general deterrent patrols, may fall here. On the other hand, focused interventions, as Weisburd and Eck (2004) describe, might be much more specific, involving multiple agencies that are responsible for different aspects

of a particular problem-solving enterprise or addressing a specific crime type or modus operandi. For example, nuisance abatement at a specific address where drugs are being sold might apply.

The Z-axis represents the level of proactivity in an intervention, from reactive to highly proactive. Mostly reactive interventions either reinforced or strengthened the reaction of the police, often relying upon traditional deployment measures, such as rapid response to 911 calls or reactive arrests. Proactive programs, on the other hand, reflect those interventions that use analysis and/or patterns of previous incidents to predict future crimes for current prevention. Moderately proactive strategies are intended to reduce a recent crime flare-up or to deter a crime likely to happen tomorrow (e.g., hot-spot policing). Highly proactive interventions are geared toward more long-term effects by dealing with underlying causes of problems or early risk factors (e.g., early childhood drug-resistance education).

We theorized that if scientifically evaluated interventions could be mapped into the Matrix according to how they are characterized along these dimensions of crime prevention, such mapping could create a translation tool by which generalizations from sets of studies could be derived. Specifically, such mapping might show where clusters of

positive and methodologically strong evaluations exist, guiding practitioners toward more effective “bins” where sets of dimensional characteristics of effective programs intersect. In turn, such evidence-based generalizations (as opposed to anecdotally based generalizations) could be applied to tactical and strategic development, agency and command staff assessment, as well as training and promotions.

To populate this Matrix for evidence-based policing, we mapped the entire field of at least moderately rigorous police evaluation research into the Matrix according to how each could be described by the three dimensions. A detailed discussion of our methodology for inclusion and mapping, and descriptions of all included studies are forthcoming in article form, but are currently available in a free online tool.<sup>5</sup> In summary, we identified ninety-two studies that satisfied at least a medium level of scientific rigor from the field of evaluation research in policing. Twenty-two of these studies were randomized experiments, and seventy were quasi-experiments using comparison group designs of moderate to rigorous quality.

To view our mapping, refer to the online interaction that shows a fly-in effect of groupings

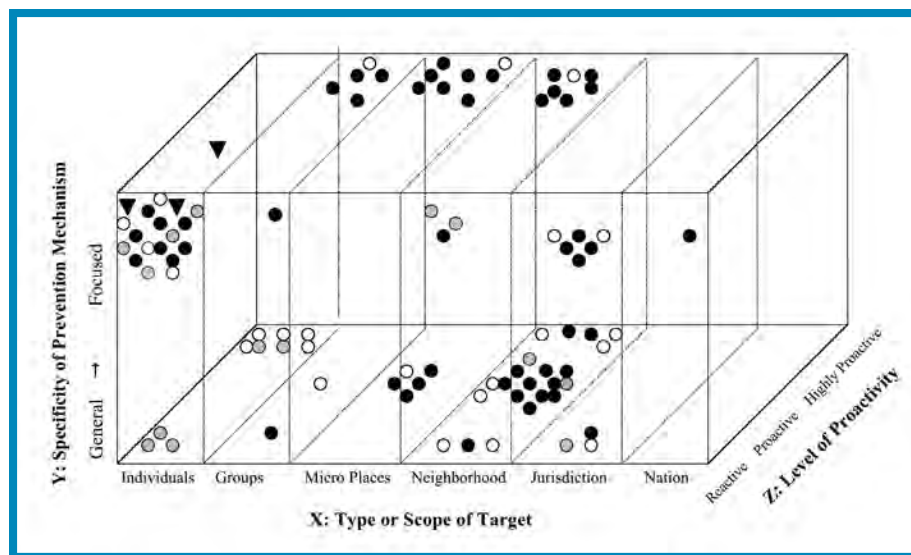


Figure 2. The Evidence-Based Policing Matrix Mapped with 92 Intervention Studies

of studies.<sup>6</sup> However, in Figure 2, we provide the entire mapped Matrix. The shape and shade of the dots indicate whether a specific study of an intervention showed statistically significant successes (black), mixed findings (gray), or no statistically significant effect (white/clear). Studies designated by an upside-down triangle (▼) are “backfire” studies (see Weisburd, Lum, and Petrosino 2001), in which a study indicated that an intervention led to an *increase* in crime or criminality.

The Matrix now shows us what single studies do not.

<sup>6</sup>See <http://gemini.gmu.edu/cebcp/Matrix/AnimatedMatrix.html>. It should be noted that, for visual ease, we did not place dots on top of each other but spaced them in general areas of the Matrix. Their precise placement does not make, for example, one more or less proactive or general than another; the dot placements are to be interpreted generally.

For example, notice the first grouping of studies mapped into the Individuals slab of the Matrix. This grouping indicates that when police use strategies focused on individuals, the evidence reveals mixed and sometimes backfiring results (for a specific listing, summaries, and findings for each study in this area, please refer to the online tool). The Matrix also indicates that many of these individual-based strategies fall in the reactive portion of the Matrix, an approach that we generally know does not reduce crime. Even those individual approaches that are more proactive show mixed or ineffective results (DARE is one example). Indeed, there are some studies in this slab that point to beneficial results (when they are more specific in their activities). Overall, however, this particular region of the Matrix does not provide convincing

<sup>5</sup>Cynthia Lum, Christopher Koper, and Cody Telep (2009). Evidence-Based Policing Matrix, Center for Evidence-Based Crime Policy, <http://gemini.gmu.edu/cebcp/Matrix.html>.

evidence that focusing only on individuals is a good idea. This region, however, is where the vast majority of police activity occurs (response to 911, reactive arrests, investigations, offender targeting).

Other patterns from the Matrix are also immediately noticeable. For example, the Groups slab tells us that we know much less about interventions for groups (like gangs and co-offenders) than individuals, even though police seem very much interested in co-offender strategies. The research that does exist seems to indicate that highly proactive and specific tactics, such as the “pulling levers” approach (see Braga, Pierce, McDevitt, Bond, and Cronin 2008), are promising. There is also much positive evidence of the effectiveness of tactics at the micro-place level, where they tend to be more proactive and specific/focused. At larger geographic units, interventions in the Neighborhood slab (i.e., neighborhoods, communities, police beats and sectors) are much more general in nature compared to studies at micro places, most likely due to the increase in the unit of analysis. While many neighborhood-based studies showed successful results, a cautionary note is in order: nearly all of these neighborhood-based studies used only moderately rigorous methods. These studies almost completely disappear when looking at just the most rigorous studies, an

effect that does not occur with micro-level studies.

It is important to note that organizing policing research is not new and has already been undertaken by others (see Braga 2007; Mazerolle et al. 2007; Sherman 1997; Sherman and Eck 2002; Weisburd et al. 2008). In particular, Weisburd and Eck (2004) created a two-by-two grid to organize studies by “Diversity of Approaches” and “Level of Focus.” Our Matrix builds on this existing research infrastructure, both in the collection of studies (we updated the study collection through 2008) and in the creation of the Matrix itself. What we contribute is a three-dimensional tool specifically designed to translate a body of research into a usable form for tactical development as well as agency and officer assessment.

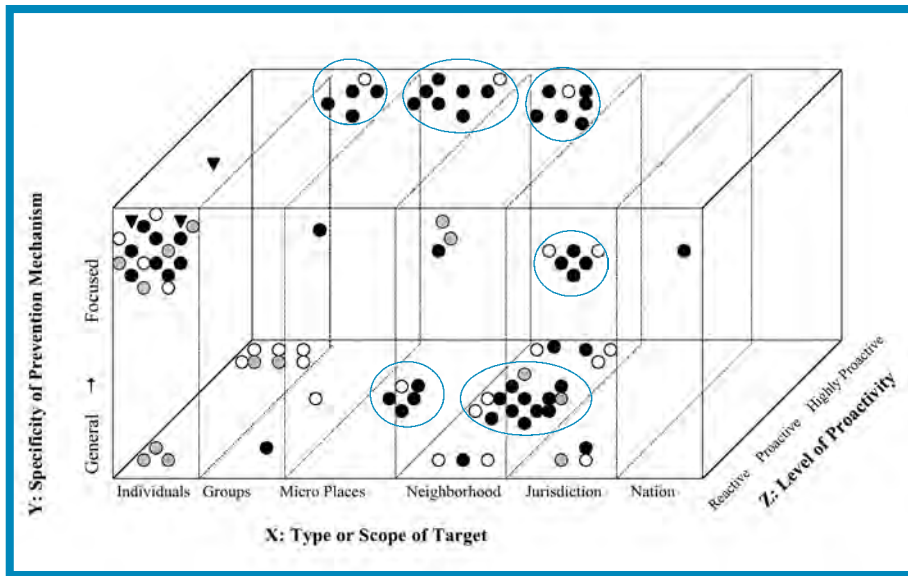
### Using the Matrix to Translate Research into Police Practices

What begin to emerge with this mapping are clusters of studies that indicate target-proactivity-specificity characteristics that may be the most fruitful for building prevention programs. Thus, for the police, the best use of the Matrix is to use generalizations of effective intersection dimensions to develop operational tools and strategies from those generalizations *that are specific to that agency*. One common argument police may use to

resist research is that findings from a particular study of one jurisdiction (e.g., large, urban, East Coast city) cannot be generalized to another (e.g., smaller, suburban, Midwest town). The Matrix overcomes this resistance by providing police with more general intersections of dimensions that seem to indicate the most promise, given the totality of the evidence.

In Figure 3 we circle these *realms of effectiveness* (one can also see realms of ineffectiveness or areas with little generated evidence). For example, a promising realm of effectiveness is the intersection of focused, place-based, and highly proactive dimensions (top circles). These studies include hot-spot policing, problem-oriented approaches that are multi-agency and specific, and drug market enforcement that uses civil remedies. Realms that might be less effective or show mixed results seem to be individually based approaches that are reactive in nature (for example, increasing arrests for certain crimes). Later, when separating the most rigorous evaluations from moderately rigorous evaluations, one can see even fewer realms in which we have great certainty about the promise of policing interventions.

Using these realms, an example of a specific translation from this mapping might be as follows. A commander may be strategizing about how to reduce auto thefts in his district. He could use traditional methods,



*Figure 3. Realms of Effectiveness*

such as giving his officers look-out lists of recently stolen vehicles; increasing general patrol and random license plate checking; investigating single cases of auto thefts that have already occurred; or deploying decoy vehicles to catch offenders in the act. But these approaches are all individual-based, reactive, and general, which the Matrix indicates may not be the most promising in terms of reducing crime. By using the Matrix, a commander might try the following, alternative strategy. The Matrix indicates place-based approaches are promising; thus, the commander may have the crime analysis unit determine hot spots (micro places) of stolen and recovered vehicles and hot portions of roadways where the probability of discovering a stolen vehicle is abnormally high. He might consider a reduction strategy that includes increasing

proactive traffic stops, using license plate reader technologies at those places, or providing visible presences on those hot roadways.

Research-organizing tools like the Matrix also have other functions that can help achieve the overall goals of evidence-based policing. For instance, the Matrix can be used as an agency assessment or accountability tool. During a Compstat meeting, the focus could be shifted from reciting monthly statistics and vague assertions of tactics to real-time mapping of intervention ideas and existing strategies directly into the Matrix. This mapping not only shows if a tactic is likely to be promising but also provides an opportunity for the chief to take a leadership role in guiding commanders to more effective realms that are based on evidence. A police commissioner may require her command staff

to understand how the Matrix is used so that they can develop their own evidence-based tactics.

Such assessments could also be carried out at the district, sector, or even squad level by varying levels of command. Commanders may provide first-line supervisors with tools like the Matrix and hold them accountable to evidence-based approaches by grading their tactical portfolios against the Matrix. This could motivate sergeants to take a more active approach in designing and implementing tactics with their patrol units that reflect the evidentiary and analytic base that is available to them. Along these same lines, training officers during academy and in-service courses in fundamental concepts of how to increase their effectiveness and legitimacy exposes them to tactics (or, more generally, realms of effectiveness) backed by scientific evidence, not by anecdotes, stories, or personal experiences of other officers.

In turn, the Matrix could also institutionalize evidence-based practices and philosophies by being used for promotions and advancement. Candidates, when tested on crime prevention scenarios (which is often common at the first and second level supervisor ranks), could be assessed on their ability to develop solutions that fall within effective realms. Or the tactical resumes of those in line for promotion could be scored using the Matrix to see if contenders



generally use approaches that are more evidence based or if they tend to rely on methods that are more traditional. Such practices support cultural shifts that are also necessary in building an infrastructure that is amenable to an evidence-based approach.

What should now become obvious is that by applying these general lessons about the realms of effectiveness from the Matrix to deployment choices, the police are engaging in evidence-based policing. They would be using research evidence about what works to guide deployment decisions. Perhaps it is also a step forward from meta-analyses and systematic reviews in that the Matrix provides a visualization of sets of common, generalizable prevention dimensions of effective strategies that may facilitate intervention development. These combinations are easy to use because they have direct meaning in police discourse and officer experiences. Further, the use of the Matrix can be combined with other ways evidence-based policing might be institutionalized into practice, including greater use of crime analysis and proactive problem solving of multiple incidents, less use of reactive beat patrol or reactive case-by-case investigations, incorporating criminologists into the service and employment of the police agency, and increased supervision at the rank-and-file level.

## Other Uses of the Matrix: Researchers and Funding Agencies

Efforts to promote evidence-based policing are not the responsibility of police alone. A coordinated and strategic effort is needed between the police and researchers, making the translation tool relevant to both (as well as to agencies funding such research). Aside from pointing to where research is needed, organizational tools like the Matrix can also be used as a common ground for conversations between researchers, police practitioners, and funding agencies when partnering to evaluate, study, and ultimately reduce crime. The Matrix can be used to elicit discussion and negotiation between the researcher and the police agency in a way that does not divorce the police researcher from the real needs of the police agency but also keeps the agency grounded in evidence-based regions.

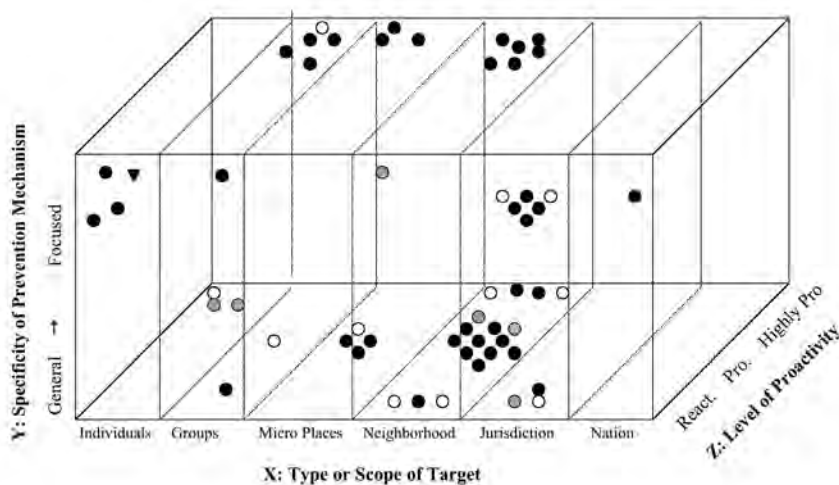
For example, police researchers are in the business of supplying evidence. Therefore, our job is to generate more research using the strongest available methods that can be placed into translation tools like the Matrix. The Matrix shows researchers and funding agencies not only areas of police intervention that have not been researched but also areas that have not been researched *well*. To make this point, Figure 4

splits the Matrix into two groups of studies: Figure 4A represents fifty-eight studies (or 63 percent of the entire Matrix) that used moderately rigorous designs, while Figure 4B shows the thirty-four studies (37 percent) that used stronger methods.

This separation shows that there are much fewer high-quality evaluations available. However, as Weisburd, Lum, and Petrosino (2001) have shown, higher quality criminal justice evaluations are less likely to show positive effects. A few other things stand out in this division: higher-quality studies that show positive effects are most consistently found in the proactive, micro place-based region. Figure 4B shows, with high certainty, that individual strategies are much less promising and in some cases harmful. Finally, notice that neighborhood- and group-based studies almost completely disappear when looking at only the highest-quality studies. If we wish to continue using such strategies, then better information must be generated at these units of analysis.

Funding agencies, such as NIJ, the Bureau of Justice Assistance, and COPS, can use tools like the Matrix to accomplish “evidence-based funding,” or funding research and interventions in strategic ways that facilitate evidence-based policing. For example, the Matrix can help NIJ decide whether research is low, medium, or high risk for achieving certain goals, and those goals

#### 4A. Quasi experiments of moderate quality



#### 4B. Studies using stronger quasi and also randomized experimentation

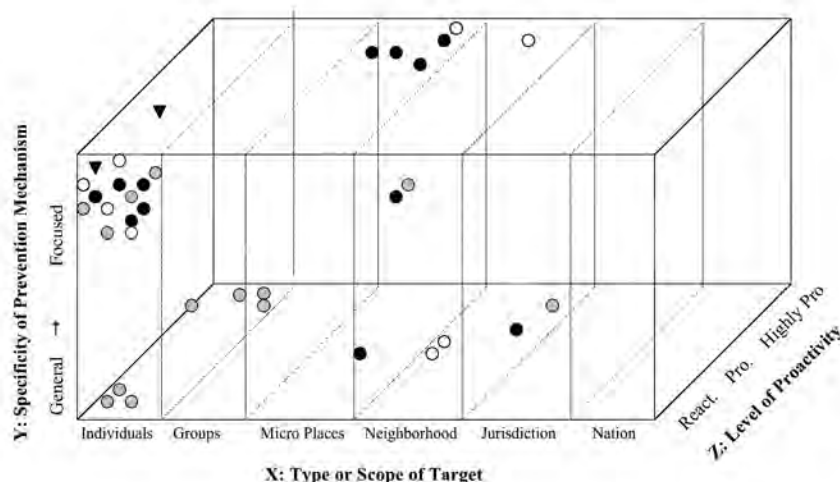


Figure 4. Comparison of Studies in the Matrix of Moderate and Strong Methods

would determine what “low risk” or “high risk” means. For example, low-risk funding could be the most cost beneficial and therefore a priority. This type of funding agenda would support increasing the quality of research in intersections and realms of the Matrix in which studies have already shown promising results.

Medium-risk funding might support research in areas of the Matrix in which little is known or there are no studies but that are closer to those realms that have already shown promise. For example, studies of focused group interventions that are only moderately proactive or that focus on known groups of offenders

may fit here. High-risk funding could be seen as bad ideas in that funding would support studies within domains in which results have shown little promise or even had backfire effects.

### Concluding Thoughts: Experience versus Evidence

This *Ideas* paper makes one assumption at the outset: evidence-based approaches are more logical, effective, and therefore better than other decision-making alternatives, such as best guesses, anecdotes, habits, individual experiences, or actions based on political or organizational whims and pressures. But is this too strong an assumption? Evidence-based approaches have been criticized as being overly scientific while disregarding officer experience and other organizational facets, institutional pressures, and rationales that seem to drive police action and decision making (Moore 2006). In particular, these critiques seem to suggest that experience (however defined) is just as, if not more, effective in reducing crime, and that evidence-based approaches and experience are mutually exclusive. As a social scientist, I would say that only science could test the validity of these two assumptions. But let me be more practical (and indulgent) on this topic by relying on my own experience as a police officer to close this *Ideas* paper.

With regard to the assumption that an evidence-based approach is the most logical, Sherman (1984) argued that scientific knowledge could provide better predictions about crime and criminality for preventative efforts than could single or even collective experiences. But the problem of convincing police agencies of this idea does not lie in its lack of logic. Evidence-based approaches, analysis, and the use of scientific knowledge for prevention are worldviews that are outside the purview and daily realities of officers and supervisors. Officers are entrenched in the everyday routines of the reactive response model, a reactivity that is constantly being reinforced by almost every aspect of organizational structure and culture. This culture has, as Sherman argued, few feedback mechanisms about the consequences of employing experience to make decisions. Thus, what emerges as experience is simply a collection of loose and non-systematic combinations of memories that emerge from those routines. As Sherman (1984, 62) stated, “[t]he problem with experience as a basis for exercising police discretion is that it provides incomplete information with respect to each series of encounters.”

Take, for instance, an alternative world: if a police agency were to operate in an evidence-based way, experience would emerge as memories

from engagement in those types of activities. In such a world, a seasoned officer’s experience would tell him or her that reacting one at a time to 911 calls will not reduce crime; only a directed patrol program based on clusters of crimes discovered from crime analysis could. That officer in that alternative world might also have the experience that working with multiple agencies to tackle drug problems in a community is a better idea than buy-and-bust operations on the street or a raid on a distribution house. In other words, experience emerges from whatever paradigm an organization chooses to use and therefore cannot be divorced from that choice. This also implies that experiences are malleable.

Police are not using evidence-based approaches *not* because they consciously believe experience is more worthwhile. They use their experience because the police organization does not provide them with any alternative worldview, strategies, or tools with which to think about and combat crime. The lack of alternatives has led them to believe that their individual experience is the only way for decisions to be made, a philosophy reinforced by other officers and organizational practices. Indeed, the term “experience” is a euphemism for other words in policing, including tradition, habit, and culture. There are few incentives to change this mentality and to

build officers’ capacity to become crime prevention specialists.

Are evidence-based approaches and experience mutually exclusive? One would be hard pressed to find evidence-based policing advocates who suggest, with the same fervor as their counterparts, that experience should be disregarded for scientific evidence. Experience, after all, cannot be divorced from behavior. Indeed, experience is what provides the force behind the needs of many evidence-based tactics. Research may point police to certain areas of the Matrix that are more effective, but officers and commanders ultimately have to be creative about the short- and long-term tactics and strategies that they employ to reap the benefits of those general dimensions within the specific context of their respective jurisdictions.

The “experience excuse,” from one who has this experience, is flippant and invalid. It is an easy rebuttal to what is indeed a difficult but necessary task of both leadership and operations. As Denis O’Connor, Her Majesty’s Chief Inspector of Constabulary in the United Kingdom, recently emphasized, disregarding scientific evidence about policing is “professional ignorance.”<sup>7</sup>

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<sup>7</sup>Presentation at the 2nd International Conference on Evidence-Based Policing, sponsored by the National Police Improvement Agency and the University of Cambridge, 1–3 July 2009 (see (<http://www.crim.cam.ac.uk/>)).



At the same time, however, to move forward a more evidence-based approach and to translate research into practice, researchers can no longer rely on the hope that science will stand on its own merit with the majority of police officers and commanders. Rather, tools that promote the regular

and institutionalized use of research and analysis in everyday police activity are needed. This requires a strategic and creative effort by police leaders, researchers, funding agencies, and think tanks to centralize the importance of using research evidence and analytic thinking in

practice. In reference to evidence-based policing, Sherman (1998, 14) astutely noted that “. . . the influence of ideas may be far more glacial than volcanic.” More than a decade later, we remain far from an eruption of change, but perhaps the glacial pace has picked up steadily.

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## ABOUT THE POLICE FOUNDATION

The Police Foundation is a national, nonpartisan, nonprofit organization dedicated to supporting innovation and improvement in policing through its research, technical assistance, communication, and professional services programs. Established in 1970, the foundation has conducted seminal research in police behavior, policy, and procedure, and works to transfer to local agencies the best new information about practices for dealing effectively with a range of important police operational and administrative concerns. Motivating all of the foundation's efforts is the goal of efficient, humane policing that operates within the framework of democratic principles and the highest ideals of the nation

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