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## Babies Behind Bars

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### Overview

Although there has been massive growth in the number of women in prison in the USA and other countries, women remain a significant minority within correctional systems. In the United States, the number of women in prison increased by more than 800 % in the 30-year period between 1977 and 2007. In the United Kingdom, the female prison population nearly tripled in just a 12-year period from 1992 to 2004. Despite these increases, in most countries, women still constitute less than 10 % of the prison population (Alejos 2005). There have long been concerns that the correctional system, which was built around a need to house large numbers of male offenders, ignores, minimizes, and marginalizes female inmates and their specific needs, including medical needs.

In particular, statistics find that a large proportion of female inmates are mothers. One recent study in the United Kingdom reported that more than half of women in prison have children under the age of 16 and one-third of women have children under 5 years old (Edge 2006). Similarly, in the United States, more than half of state and federal inmates have an estimated

1.7 million minor children (Glaze and Maruschak 2008). In most cases, the women are the primary caregivers and had been living with their children prior to incarceration. The children of men who are imprisoned typically stay with their mothers during the father's incarceration; however, children whose mothers are incarcerated are much less likely to remain in their family home, often being placed with extended family. Additionally, incarcerated mothers are five times more likely than incarcerated fathers to report that their children were placed in foster care or other institutions during their incarceration (Glaze and Maruschak 2008). While the number of women who are pregnant, give birth, or have new infants while in prison is much smaller than the number who had children prior to incarceration, all of these women and their infants and children have specific needs that are often not addressed by prison policy, practice, or administration.

### Legal Issues with Mothers and Children in Prison

In 1990, the United Nations Congress on the Prevention of Crime and Treatment of Offenders issued a resolution that the imprisonment of pregnant women should be avoided, stating that "the use of imprisonment for certain categories of offenders, such as pregnant women or mothers with infants or small children, should be restricted and a special effort made to avoid the

extended use of imprisonment as a sanction for these categories” (Alejos 2005, p. 13). There are a number of issues that arise in dealing with convicted women who are either pregnant or are mothers, especially to young children. For women (and men) who have children, applicable legal considerations include the Convention on the Rights of the Child, which specifies that children should not be separated from their parents against their will except in a case where it is in the best interest of the child (Alejos 2005, p. 14). The African Union’s Charter on the Rights of Children, for example, specifies that noncustodial sentences should be considered first in cases of pregnant women and mothers of infants and young children and that the purpose of punishment should be reform and reintegration with family (Alejos 2005). In fact, the best interests of the child are indicated as the primary guiding factor, which raises the question of whether it is in a child’s best interests to remain with their mother in a prison or to be separated from their mother in order to remain in the community.

In terms of pregnancy and childbirth in prison, the United Nations standard minimum rules for the treatment of prisoners specify that women should receive all necessary prenatal and postnatal care, that birth should occur in a hospital outside of the institution, and that a child’s birth certificate should not list a prison as the place of birth. Additional criteria require that efforts should be made to maintain and improve relationships between prisoners and their family, which would presumably include children. While many international legal standards suggest that prison should only be used for pregnant women in extreme circumstances, for those women who are incarcerated while pregnant, additional legal considerations address the necessity of appropriate prenatal care, including nutrition, medical care, a healthy environment and exercise, and attention to any cultural or religious issues surrounding childbirth. Physical restraint of pregnant women should not be used except in extreme circumstances, and numerous international standards call for abolishing the practice of shackling or restraining women during labor and childbirth.

Children living with a parent in prison also present special legal challenges, and the management of these children varies widely by nation (Bastick and Townhead 2008). General international standards specify the need for monitoring mechanisms and the involvement of child welfare agencies in institutional decision-making that affects the child. Adequate accommodations should be available, including separate mother-child units that are removed from the general prison population, the provision of a safe and healthy environment, as well as appropriate facilities to house the children at times when their parent is participating in activities not appropriate for children. Underlying these general standards is a fundamental assumption that the child is not a prisoner and should never be treated as one.

### **Pregnant in Prison**

Data compiled by the Bureau of Justice Statistics indicated that in 2004 in the USA, 4 % of female state inmates and 3 % of federal inmates were pregnant when they were admitted to prison. International standards require that pregnant inmates receive all appropriate medical care, nutrition, and assistance. In the USA, a number of medical organizations as well as the National Commission on Correctional Health Care have issued policy statements on appropriate health care for inmates in general and for pregnant inmates more specifically. These recommended guidelines include “timely and appropriate prenatal care, specialized obstetrical services when indicated, and postpartum care” (NCCHC). Specific issues that should be addressed among pregnant inmates include prenatal medical exams, nutrition, and counseling, along with diagnostic screening for high-risk pregnancies, including HIV testing. In addition, the NCCHC recommends that institutions should have written agreements with a local medical facility for delivery. Despite these policy guidelines and standards, research finds that pregnant women in prison do not receive adequate prenatal care and health screening (Edge 2006). Research with pregnant inmates in England finds that these women report being constantly hungry, being physically

restrained with shackles and belly chains, and invasions of privacy with male guards present during medical exams and delivery.

In 2010, the Rebecca Project for Human Rights in conjunction with the National Women's Law Center conducted a state-by-state analysis of policies and practices for dealing with pregnant and parenting women in prison in the USA. According to this study, three-quarters of states do not have adequate (or any) policies in place for providing prenatal care for women who are pregnant during their incarceration. This may be especially problematic because female inmates typically are less likely than other women to have had routine health care prior to their incarceration. These women may have undiagnosed health conditions as well as higher levels of drug use, sexually transmitted diseases, and risk factors for HIV, which may lead to a higher proportion of high-risk pregnancies in this population. Incarcerated women are also more likely to have histories of neglect and victimization, including sexual assault. Some research has noted that since many women in prison receive short sentences, the rapid turnover of the female prison population may interfere with the ability of institutions to ensure adequate prenatal care and aftercare (Edge 2006). The failure to provide a high level of prenatal care may have implications for the pregnancy as well as short-term effects on the infant, including low birth weight or other birth complications, and long-term consequences for the health of both mother and baby.

Despite a great deal of increased attention to the issue recently, the practice of shackling female inmates during pregnancy, labor, and delivery remains an area of concern. The National Commission on Correctional Health Care (NCCCHC), the American Congress of Obstetricians and Gynecologists (ACOG), the American Medication Association (AMA), and the Association of Women's Health, Obstetrics, and Neonatal Nurses (AWHONN) have all issued position statements arguing that the use of restraints for pregnant women should be avoided completely except in cases of extreme risk, and when restraints are judged to be necessary, the least restrictive method should be used.

For example, the AWHONN (2011, p. 817) "opposes the practice of shackling incarcerated pregnant women...[which] should only take place if prison officials reasonably believe, after an impartial and thorough evaluation, that a particular individual may attempt to harm herself or others or presents a legitimate flight risk." In January 2012, the American Correctional Association (ACA) also issued a policy statement that pregnant women should be restrained in the least restrictive method possible, that waist and electronic restraints should never be used during pregnancy, and that leg restraints should never be used during labor and delivery. While efforts to restrict the use of physical restraints on pregnant and laboring women in prison are gaining momentum, more than half of the states do not have policies that comprehensively limit the use of restraints (The Rebecca Project 2010). As of 2012, only 17 states have adopted laws that limit the use of physical restraints for pregnant inmates, with four states addressing the issue in policy.

### **International Examples of Prison-Based and Community-Based Programs**

While it is more common outside of the USA for babies born in prison as well as other children to reside in prison with their mothers, there is little information available and even less consistency in how institutions and nations deal with mothers and their children. For example, in Australia, a mother or primary caregiver may submit a request to the superintendent of the institution that her baby live in the facility with her for up to 12 months. Requests may also be made for older children to stay overnight. In France, however, the decision to keep a child in prison is left up to the mother with no approval necessary except for the agreement of the father, and babies may stay in the prison until they are 18 months old (Alejos 2005). In Finland, legislation allows both mothers and fathers to bring their children into prison with them. While there is no specific age limit, this typically involves children younger than 2 or 3 years old. Some countries, like

Germany and Spain, allow older children (in some cases, up to age 6) to live in prison with their mothers. In other countries, like Norway, children are not allowed in prisons at all.

There are a number of examples of the various ways that programs throughout the world manage babies, children, and their mothers in prisons and community-based alternatives. In England, the prison service has designated Mother-Baby Units (MBUs), which are described as separate living arrangements within a women's prison where women and their children may live together during her incarceration (Edge 2006). These units are designed with the rights of the child as the primary consideration. Children can stay with their mothers in prison up to a maximum of 18 months of age. Women must apply to participate in the program, and admission is determined based on what is in the best interests of the child. Mothers must be and remain drug-free, must be willing to take primary parental care of the child, and must have no physical and/or mental health or other concerns that would interfere with their ability to care for the child. Applications are taken system-wide, and women may be transferred to another facility if they are accepted. Because of the geographic distribution and isolation of facilities, placement in a Mother-Baby Unit may mean that a mother and baby are separated from the rest of their family, including any older children she may already have.

Canada also has an Institutional Mother-Child Program (Alejos 2005). Mothers who are categorized as either minimum or medium security and who are housed in institutions that provide the program are eligible to participate as long as the offense did not involve a child. In general, participants may request that their young children (up to 4 years old) live with them full time and that older children (up to 12 years old) may have part-time residence. Canadian policy specifies that the primary consideration in allowing women to participate should be what is in the best interests of the child, and the goal of allowing children to reside with their mothers is to maintain and support stable mother-child relationships. Interestingly, those reviewing applications for participation in the program are also directed, when feasible, to consider

the wishes of the child in determining who will be accepted. If accepted into the program, mothers sign a parenting agreement, which may include parenting training, health-care plans, and other criteria. Program staff monitor a mother's compliance with program requirements and review cases after the first month and then every 6 months.

While women have long been allowed to keep young children in prison with them in Spain, Feintuch (2010) describes an institutional program implemented in 2004 with the stated goal of removing all children from prisons by 2012. These "external mother units" are designed for those women with longer sentences, who committed a nonviolent offense. In these units, women are housed in separate apartments with their children, and the women are responsible for the feeding and care of their children. Efforts are made to maintain a homelike environment, including the language used to describe the units, referring to a woman's "apartment" and "home." During the day, the children attend a community preschool, while the women participate in programs focusing on parenting classes, education, and job training. The women may also work in the community as long as the job does not interfere with their child's schedule. Cases are reviewed frequently to ensure the health and safety of the children, and as a child approaches 3 years of age, the mother's case is reviewed to determine whether she could complete her sentence in the community. The units have an age limit of 3 for the children, so older children are not eligible to live with their mothers in the units. There are only a few facilities in the country, which means that mothers may be located in a facility some distance from their other family, and this may also interfere with the involvement of fathers. Interestingly, Spain does have one family unit where families can live if both parents are incarcerated. Finally, the external mother unit program is also heavily dependent on help from nongovernmental organizations, so continued funding may be an increasing concern. Community-based programs are also available for convicted parenting women and their children. In addition to the "external mother units" described, Spain is increasing the use of community-based alternatives for nonviolent, parenting women with shorter sentences.

## Children in Prison: US Examples

In contrast to the numerous examples from the international perspective, it is uncommon for imprisoned mothers in the United States to keep their children with them while serving their sentence. In the USA, it is common for mothers who give birth while incarcerated to be separated from their babies within a few days. While the mother returns to the institution to finish serving her prison term, the baby is placed in the community with family or social services. Mothers who have children prior to incarceration simply leave those children behind when they begin serving their sentence. Support for the use of prison nursery programs in the United States has varied over the years, and few states operate programs. There are, however, a few notable examples of programs ranging from prison nurseries to community-based sanctions. There are generally two goals associated with these types of programs: that allowing mothers and babies to stay together will foster positive attachment and bonding and, relatedly, that this environment will be rehabilitative for the mother and will reduce her chances of recidivism.

Within the past two decades, a minority of states have developed prison nursery programs, which allow children born during their mother's imprisonment to remain with the mother for a period of time following birth. The oldest program, operating since 1901, is located in New York. Other programs have been developed in Nebraska, Washington, Massachusetts, Illinois, Indiana, Ohio, California, West Virginia, and South Dakota. The Federal Bureau of Prisons also operates a program, Mothers and Infants Nurturing Together (MINT). Prison nursery programs in the USA are generally designed for women who give birth during their incarceration, who were convicted of a nonviolent offense, and who have no history of child abuse or neglect. The length of time that babies can stay with their mothers in the program varies from a low of 30 days in South Dakota to a maximum of 3 years in Washington. Most of the prison nursery programs in operation are housed in an area of the prison separated from the general population and incorporate parenting skills training.

The Bedford Hills Correctional Facility for Women in New York houses the nation's oldest prison nursery program, operating since 1901. Women who are pregnant when admitted to prison and who will give birth in custody are eligible for the program. Selection of participants is determined by a number of factors, including a consideration of who will have custody of the child, the length of the mother's sentence, and the type of crime she committed. If the mother will be discharged from prison within 18 months following the birth of her child, the babies can stay with their mothers the entire time. Otherwise, the maximum stay is 12 months. Mothers receive weekly nurse visits, and the program includes specialized children's activities, daycare, parenting education, family counseling, and assistance with child placement.

In 1994, Nebraska expanded an existing program for mothers and children into a prison nursery program modeled after the Bedford Hills New York program (Carlson 2001). Mothers in the women's prison in Nebraska give birth at a local hospital. For program participants, both mother and baby return to the nursery facility after discharge from the hospital. To be eligible for the nursery program, women must have less than 18 months left on their sentence following the birth of their child, must have no prior convictions for child abuse, and must sign a parenting program agreement. As part of that agreement, prenatal classes are required, in addition to parenting classes, educational programs, and employment. In its early stages, participating mothers reported strong support for the program, feeling that they have a better relationship with their child and that they are better mothers as a result of their participation and involvement in parenting classes (Carlson 2001).

More recently, the Washington Correctional Center for Women opened the Residential Parenting Program in 1999 for minimum security women who had committed a nonviolent offense and would have no more than 3 years remaining on their sentence following the birth of their child (Women's Prison Association 2009). In a separate unit within the facility, mothers in the program each have a private room with a bed for

her child. The unit also includes indoor and outdoor children's play areas. Monthly pediatrician visits are provided to monitor the health and well-being of the children. Because children may stay with their mothers up to 3 years, the facility partners with a local organization to provide an early head start program for the children, which incorporates activities for the children, nutrition counseling, information about child development, and maternal depression screenings.

### **Alternatives to Incarceration in the United States**

There is also a growing effort in the USA to develop alternatives to incarceration for convicted women with young children. More than half of the states have some form of family-based treatment as an alternative to prison. Summit House in North Carolina was one example of a model residential alternative to incarceration program for women with young children who were convicted of a nonviolent offense (Women's Prison Association 2009). Participation in the program for 12–24 months was a court-ordered condition of probation. With the goal of rehabilitating women while maintaining family bonds, the program included counseling, life and job skills training, substance abuse counseling, supportive housing, and parenting education. Like many alternative community-based programs, Summit House is a nonprofit organization with funding dependent on the current economic climate. Despite being recognized as a model program and evidence of substantial cost savings in terms of both reduced recidivism among the participants and reduced social service costs of dealing with the children, funding was cut substantially, and the program was forced to close in June 2011.

Another example is Drew House, described by Goshin and Byrne (2011), a newly designed program in New York that provides supportive housing to women charged with felony offenses and their children. The women in the program are typically charged with nonviolent offenses, although some women with violent felonies may be eligible if there was no serious injury and the

victim agrees to the placement. The program uses a gender-responsive, relational model that promotes independence, and court-mandated conditions typically involve drug testing, educational and vocational training, efforts to find employment, as well as participation in parenting classes. Participation in the program typically lasts between 12 and 24 months. During program participation, the women and up to three children live in their own apartments, paying some or all of the rent. As with the Summit House program, availability of funding is also an issue with Drew House.

### **Results of Prison-Based and Community-Based Programs**

Research on the effectiveness of prison-based and community-based programs for parenting women and their children is very limited. While knowledge about the consequences of the separation of mothers and their children due to incarceration is also limited, research does suggest that both the mother and their children can be adversely affected. For example, children separated from their mothers may experience attachment disorders, mental health problems, and behavioral problems. Others report academic failure and increased levels of criminal involvement among children of incarcerated women (Byrne et al. 2012). Thus, it is important to consider the effectiveness of these types of programs in terms of their impact on the mothers who are participating but also in looking at the long-term impacts on the children.

When sufficient resources are dedicated to prison nursery programs designed for convicted women and their children, results are generally positive, providing an environment that facilitates appropriate child development and allows mothers and their children to develop strong relational bonds. For example, studies in the UK indicate that pregnant inmates are more likely to reduce their levels of smoking, drinking, and drug use when presented with information about healthy behaviors during pregnancy (Edge 2006). Longitudinal research also suggests that mothers are likely to retain custody of their children following participation, and the women also demonstrate reduced

recidivism (Byrne et al. 2012). Community-based alternatives to incarceration also appear to produce positive results related to mother-child attachment and recidivism rates (Campbell and Carlson 2012). Additionally, the children who participate with their mothers avoid placement in the foster care system, maternal separation, and the related negative repercussions.

## Future Directions

With the increasing attention being paid to pregnant and parenting women in prisons, it has become apparent that there is very little information maintained to track the number of pregnant women, the outcome of those pregnancies, and the numbers of children born or housed within prisons throughout the world. Poso et al. (2010) refer to the “institutional invisibility” of these children and the policies and practices related to children and their parents. In the USA, research has found that correctional administrators are generally unfamiliar with prison nursery programs (Campbell and Carlson 2012). While these administrators expressed some interest in learning more about this type of program, they expressed reservations that would ever be implemented in their state or facility. At a minimum, facilities should consider focusing on ways to facilitate relationships between incarcerated mothers and their children, including creating visitation areas for children that provide a more homelike setting or allowing mothers to create audio-recordings of bedtime stories that they could send to their children (Bastick and Townhead 2008). Other community-based programs face issues with maintaining sufficient resources to serve the women and children who need them.

Most of the parenting women in prison-based programs are low risk and could reasonably serve their sentences in the community. The Women’s Prison Association suggests increasing the use of community corrections and alternatives to imprisonment for parenting women. Whether in a prison-based or in a community-based program, these programs should address the needs of both the woman and her family and should offer educational and vocational services as well as

education on parenting skills. More generally, there is a great need for additional research and evaluation to assess these programs, including the components that produce the greatest benefit to both the women and their children.

## Related Entries

- ▶ [Extent of Imprisonment: Global View](#)
- ▶ [Health Issues in Prison Reentry Models](#)
- ▶ [HIV in the Correctional System](#)
- ▶ [Legal Status of Abortion](#)
- ▶ [Unintended Effects of Imprisonment](#)

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## Bayesian Learning

► [Bayesian Updating and Crime](#)

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## Bayesian Updating and Crime

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### Synonyms

[Bayesian learning](#); [Cognitive change](#); [Experiential effects](#); [Perceptual updating](#)

### Overview

Bayesian updating – the principle that individuals update prior beliefs in light of observed data according to probability rules – has important substantive implications for criminology. Theoretically, this principle may help formalize key causal mechanisms of deterrence, rational choice, social learning, symbolic interactionist, and developmental perspectives of crime. Empirically, recent research linking individuals' perceptions of punishment risk to the objective

certainty of arrest has developed formal models drawn from Bayesian updating. Such models help link macrolevel research on aggregate crime rates to microlevel research on individual risk perceptions and self-reported crime. This essay reviews empirical work on Bayesian updating of risk perceptions, points to theoretical and methodological challenges in this area, and outlines future research opportunities for perceptual dynamics and crime.

### Introduction

Bayesian updating, or Bayesian learning, has become an increasingly important principle for specifying how human beings change their beliefs in light of new evidence. It has been applied to a variety of substantive topics, including machine learning, language acquisition, artificial intelligence, and dynamic systems. In criminal justice research, Bayesian inference has been applied to jury decision-making, as a rational way of accumulating evidence to reach a verdict (e.g., Robertson and Vignaux 1995). And in criminology, Bayesian updating has primarily been approached from a deterrence perspective, where individuals are argued to follow Bayesian processes when updating their perceptions of formal sanction risk in light of new evidence (Nagin 1998). Indeed, the link between Bayesian updating and deterrence theory is a useful place to begin the current essay.

### Bayesian Updating, Deterrence, and Rational Choice

The deterrence doctrine is rooted in a rational decision-making framework. In his seminal work, *Essay on Crimes and Punishment*, the Italian Enlightenment scholar Cesare Beccaria ([1775] 1983:44) presented a utilitarian philosophy of criminal punishment that assumed actors weight pleasures and pains associated with behavior and seek to maximize pleasure and minimize pain. It follows that threatening citizens with punishments that are certain, swift, and proportional to the severity of crime would deter the public from violating the terms of the social contract. Beccaria argued that deterrence requires that punishment



must be known in advance by all citizens, and therefore, written laws must clearly stipulate proscribed behaviors and unequivocally designate penalties for transgressors. Beccaria ([1775] 1983:44) further argued that formal sanction by the state is only effective insofar as citizens accurately perceive the cost of crime and apply this information to future offending decisions: punishments “ought to be chosen, as will make the strongest and most lasting impressions on the minds of others, with the least torment.”

The deterrence doctrine of the classical school was later formalized by neoclassical economists, who assume that actors maximize expected utility subject to constraints. Drawing on von Neumann and Morgenstern’s (1944) expected utility theory of risky decisions under uncertainty, Becker (1968:177) specified a utility function for criminal behavior that included the deterrent effect of punishment:

$$E(U) = (1 - p) U(Y) + p U(Y - F) \quad (1)$$

where  $E(U)$  refers to expected utility,  $p$  is the probability of getting caught as perceived by the criminal,  $(1 - p)$  is the perceived probability of getting away with crime,  $Y$  is returns to crime (both monetary and psychic), and  $F$  is the penalty. This utility function describes two states: getting caught or getting away with crime. When  $p = 1$ , the criminal expects to get caught with certainty and, therefore,  $E(U) = U(Y - F)$ ; that is, the expected utility of crime is equal to the utility of the perceived returns to crime minus the punitive sanction (assuming that the criminal keeps her booty when caught). When  $p = 0$ , the criminal expects to get away with certainty and, therefore,  $E(U) = U(Y)$ ; that is, the expected utility of crime is equal to the utility of the returns to crime. A person is assumed to commit crime when the expected utility of crime is higher than the expected utility of alternative legal pursuits (Taylor 1978). Moreover, Eq. (1) implies that, all else being equal, an increase in  $p$ , the perceived certainty of punishment will reduce the utility of crime, and thereby the probability of crime.

Both the classical and neoclassical models’ emphases on the actors’ perceived probabilities of

punishment underscores the importance of information for deterrence and for decision-making in general. Because individuals’ perceptions of sanction risk are not exogenously determined but rather are endogenously produced through social interaction, a rational choice theory of deterrence and crime requires a theory of information. Such a theory would specify how information about sanction risks are communicated and disseminated to individuals. Here, Bayesian updating can provide a mechanism for risk communication which is consistent with rational choice theory. Understanding Bayesian updating first requires an understanding of the basics of Bayesian statistical inference.

### Bayesian Inference and Updating

Based on the probability theorem posthumously published by Thomas Bayes (1701–61), Bayesian updating refers to the general principle that subjective beliefs should change given exposure to new evidence (Bayes and Price 1763). Bayesian updating provides a rational and principled way of combining prior beliefs with new evidence using Bayesian inference. It begins with two assumptions: (1) Subjective hypotheses about the world can be expressed as degrees of belief, which in turn, can be expressed in terms of probabilities ranging from 0 to 1. (2) Human beings are able to use probability distributions to represent uncertainty in inference. Given these assumptions, actors can use probability theory to compute the degree of belief of a hypothesis,  $h_i$ , given some observed data  $d$ , where  $h_i$  is a member of the set of mutually exclusive and exhaustive hypotheses  $\mathcal{H}$ . Belief in  $h_i$  prior to observing the data  $d$  is defined as the *prior probability*, denoted as  $P(h_i)$ . The probability of observing datum  $d$  given that  $h_i$  is true is the *likelihood*, denoted  $P(d|h_i)$ . Bayes’ rule can then be used to derive our belief in  $h_i$  after observing the data, which is the posterior probability denoted  $P(h_i|d)$ :

$$P(h_i|d) = \frac{P(d|h_i)P(h_i)}{\sum_{h_j} P(d|h_j)P(h_j)} \quad (2)$$

where  $h_j \in \mathcal{H}$ . The denominator is simply the sum of all possible hypotheses under consideration

**Bayesian Updating and Crime, Table 1** Hypothetical Burglar Arrest Perceptions Given Observed Arrests

Prior probability $P(h_i)$	Likelihood $P(d h_i)$	Posterior probability $P(h_i d)$
$P(\text{certain}) = .30$	$P(.80 \text{certain}) = .80$	$P(\text{certain}.50) = .522$
$P(50/50) = .30$	$P(.80 50/50) = .60$	$P(50/50 .50) = .391$
$P(\text{get away}) = .40$	$P(.80 \text{get away}) = .10$	$P(\text{get away}l.50) = .087$

which ensures that the posterior probabilities of all hypotheses sum to one. This equation describes a rational updating process in which new evidence is combined with prior beliefs to yield a new subjective belief. The posterior probability  $P(h_i|d)$  is equal to the likelihood of the data given  $h_i$  is true  $P(d|h_i)$  times the prior probability  $P(h_i)$ .

A simple example helps to illustrate how this equation produces Bayesian learning (see Table 1). For simplicity, assume there are only three prior hypotheses about the risk of arrest for burglary: certain arrest ( $P = 1.0$ ), 50/50 ( $P = .50$ ) and certain to get away ( $P = 0$ ). The prior probability is .30 for certainty, .30 for 50/50, and .40 for getting away. Thus, given the opportunity, an actor would be expected to engage in burglary, since the highest probability is associated with getting away with the crime. The actor then observes new information or data, in which four of five burglars are arrested for the burglaries. Given the new data (that 80 % of burglars are arrested), the probabilities for our three hypotheses are as follows: .80 for certain arrest, .60 for 50/50, and .10 for getting away.

The updated probabilities become .522 for certain, .391 for 50/50, and .087 for get away (Table 1, column 3). Note that the highest subjective probability for the posterior is now getting caught (.522). Thus, all else being equal, after updating, the actor would be expected to refrain from burglary.

Bayesian inference assumes that the observed evidence or data are generated by some underlying process or mechanism, which has crucial implications for making inferences. The likelihood is based on a probability model of the mechanism by which the data were generated. In this way, Bayesian learning is a way of evaluating different hypotheses about the underlying process generating the data and making

predictions about the most likely ones. For example, if the data on arrested burglars were generated from a random sample of the population of all burglars, and one views oneself as an average burglar, applications of Bayesian inference would be straightforward. However, if the data on arrested burglars were generated from a sample of very unskilled novice burglars, one would draw a different inference. Although the observed data are identical, this difference in the generation of the data will produce distinct likelihoods, altered posterior distributions, and different inferences. Thus, in applying Bayesian learning to substantive applications, careful attention must be paid to the generative process producing the data, a point returned to later in the essay.

### The Heuristic Critique

Bayesian updating, as well as other rational principles of learning, has been subject to theoretical and empirical critique. Indeed, the emerging discipline of behavioral economics has as its focus the study of systematic ways human beings depart from rationality. Much of this research derives from the important work of Tversky and Kahneman (1974), who conducted a series of ingenious experiments that showed actors departing from rational updating in systematic ways, which they termed “cognitive heuristics” or “cognitive shortcuts.” The assumption is that human beings have a limited ability to process information cognitively, and therefore, must rely on cognitive shortcuts. Based on results of their social experiments, Tversky and Kahneman (1974) outline four heuristic rules that individuals use to form perceived risks, and which could bring about departures from a Bayesian learning process. The first, representativeness, refers to a tendency to rely on stereotypes, while ignoring

information on population distributions. For example, people are likely to overestimate the probability a mother is black when told that she is a teenage mother, thereby forgetting or ignoring the extent to which whites are disproportionately represented in the population. In the case of certainty of sanction, individuals are likely to rely on stereotypes depicted in the media, in which criminals are caught and arrested. Research suggests that naïve individuals with no experience with the criminal justice system tend to overestimate the likelihood that they will be arrested if they commit crimes. Tittle (1980, p. 67) termed this “the shell of illusion.”

A second heuristic, availability, refers to the tendency to update based only on information that is easily or quickly retrieved from memory (Tversky and Kahneman 1974). Rare and mundane events are less likely to be recalled than common and vivid events. Moreover, the two could interact: events that are vivid, salient, and dramatic – as well as rare – could be brought to mind quicker than other events. The result can be bias due to differences in ease of retrieval, as vivid experiences or events trump other sources of information. For example, a dramatic event, such as being arrested for a crime, may swamp other sources of information in an individual’s estimate of rearrest. A third heuristic, anchoring, refers to a failure to adjust initial probability estimates sufficiently in light of new information. For example, when individuals are given an initial probability estimate that is arbitrary or even randomly assigned, followed by additional accurate information with which to update, their new estimates are consistently biased in the direction of the initial estimate (Tversky and Kahneman 1974). The estimates are anchored at the initial value, rather than adjusted properly in light of the new information. Applied to updating perceived risk of formal sanction, anchoring could lead to an effect opposite from that of availability. Individuals may fail to adjust risk estimates appropriately in light of new information and instead anchor on their baseline estimates. Tversky and Kahneman (1974) mention a fourth departure from Bayesian learning: the gambler’s fallacy. Stated simply,

the gambler’s fallacy occurs when one assumes that a departure from what happens in the long run will be corrected in the short run. For example, if seven coin flips in a row have come up tails, one might think one is “due” for a heads. Applied to updating perceived risk, this might cause individuals who continuously get away with crime to think they are “due” for an arrest, or those who experience a string of arrests think they are “due” to get away with crime (Pogarsky and Piquero 2003).

Although experimental evidence suggests that actors do depart systematically from rational updating, some scholars argue that the departures are relatively small in magnitude, given the overall decision-making process. Thus, Bayesian updating of perceived sanction risk may be present net of cognitive heuristics. The next section summarizes related research on deterrence and updating risk perceptions.

### Research on Deterrence and Perceptual Updating

Early empirical tests of Becker’s model used statistical models of aggregate crime rates, focusing on the deterrent effects of *objective* risk of punishment, using for example, risk of imprisonment (measured by imprisonment per capita) or risk of arrest (measured by arrests per crimes reported to police). Most notably, Ehrlich (1973) found deterrent effects of risk of imprisonment, but scholars criticized his simultaneous equation models for using implausible solutions to the identification problem – the problem of finding good instrumental variables to identify reciprocal effects between rates of imprisonment and rates of crime – such as assuming population age, socioeconomic status, and region have zero direct effects on crime (Nagin, 1978). Later work using aggregate data includes more plausible instrumental variables to address the problem of reverse causality and found deterrent effects. For example, Levitt (1997) employed the timing of mayoral elections as an instrument for the number of police per capita, under the assumption that such elections should have a direct effect on investment in the police force (as newly elected mayors seek to crack down on crime),

but only an indirect effect on crime. For a review of aggregate deterrence research, see Nagin (1998) and Durlauf and Nagin (2011).

Tests of the deterrence hypothesis using aggregate data assume that aggregate clearance rates are good proxies for individuals' perceptions of formal sanction risk, which is the key explanatory variable. A few economists remain uninterested in directly measuring individual risk perceptions and instead assume that the models need not describe perceptual or cognitive processes so long as actors behave "as if they are rational" and the models make good predictions. By contrast, most scholars view the measurement issue as an empirical question and welcome research on the relationship between aggregate rates of objective certainty of punishment and perceptions of the risk of sanction. Subjective expected utility models replace the objective certainty of sanction with a probability distribution of subjective probabilities. Such models are still rational models because the statistical mean of the subjective probability distribution is assumed to fall on the value of the objective probability (Nagin 1998). Empirical research from a subjective expected utility framework uses survey methods to measure perceived risk of punishment directly from respondents, rather than inferring it from behavior through the method of revealed preferences (e.g., Kahneman et al. 1997). These studies of individuals have the potential of linking subjective risk of punishment measured with survey data and objective risk of punishment measured with police clearance rates.

Early perceptual deterrence research by sociologists used cross-sectional data, eliciting self-reports of delinquent behavior and perceptions of risk of arrest in the same questionnaire or interview. These studies generally found small but significant deterrent effects for certainty but not for severity. That is, youth who perceive a high probability of arrest for minor offenses (like marijuana use and petty theft) tend to report fewer acts of delinquency. Such research was immediately criticized for using cross-sectional data in which past delinquency is regressed on present perceived risk, resulting in the causal ordering of the variables contradicting their

temporal order of measurement (Paternoster 1987). These criticisms led to panel studies in which individuals are followed over short periods of time and both risk perceptions and self-reported crime are remeasured repeatedly.

The initial panel studies surveyed two waves of undergraduate students and estimated cross-lagged panel models. Here, self-reported delinquency is regressed on lagged delinquency plus lagged perceived risk and then perceived risk is regressed on lagged risk plus lagged delinquency. These studies found that both perceived risk and delinquency were fairly stable over a 6-month or 12-month period. Moreover, they found little evidence of a deterrent effect of the certainty of sanctions: net of lagged delinquency, lagged perceived risk of punishment was not significantly related to delinquent behavior. They did find support for the opposite effect: net of lagged risk, lagged delinquency exerted significant effects on perceived risk. Paternoster et al. (1982) called this an "experiential effect," because it suggested that youth who experienced getting away with crime – arrest is fairly rare for the nonserious self-reported delinquent acts measured – reported lower risk of arrest. These findings were replicated on other two-wave panels of students. Furthermore, the results – a strong experiential effect and weak deterrent effect – were replicated in samples of disadvantaged adults in several cities at risk of serious crimes (Piliavin et al. 1986). The experiential effect was the first important empirical finding about the formation of individual risk perceptions. An experiential effect is consistent with a Bayesian updating model insofar as respondents have not been arrested between waves. If they had been arrested, that information must be included in any updating model.

Paternoster et al. (1985) found, for their two-wave panel of undergraduate students, experiential effects for minor property offender. They also found that students who were arrested between waves had higher perceptions of arrest risk. Horney and Marshall (1992) interviewed incarcerated felons and obtained their retrospective self-reported arrests and offenses. They computed, for a variety of offenses, the ratio of arrests to offenses

and found that arrest ratios strongly related to perceived risk of punishment. This finding is consistent with a model of Bayesian updating. Subsequent research used prospective longitudinal designs to examine Bayesian learning of perceived risk. Pogarsky, Piquero, and Paternoster (2004) focused on changes in risk perceptions among a sample of high school students surveyed at the 10th and 11th grade. They found that students who experienced an arrest between the waves increased their perceptions of arrest certainty. This effect was most pronounced for offenders with an initially low-risk perception, which the authors attribute to these offenders having more room for change (i.e., a floor effect). Additionally, they found that individuals who reported higher peer offending had lower perceptions of risk, presumably because those friends avoided arrest. Stafford and Warr (1993) termed such a process vicarious punishment avoidance. This peer effect was greatest for non-offenders, consistent with the idea that naïve individuals have a “shell of illusion” (Tittle 1980:67) regarding police effectiveness that is eroded through vicarious experiences.

Two recent studies incorporate Bayesian updating of perceived risk into deterrence models of subsequent offending. Matsueda, Kreager, and Huizinga (2006) examined changes in risk perceptions and offending with longitudinal data of adolescents from high-risk Denver neighborhoods. They found strong support for a Bayesian learning hypothesis for both property and violent crime: lagged ratios of arrest per offense – which they termed, “experienced certainty” – were monotonically (positively) associated with perceived risk of arrest. In addition, respondents’ unsanctioned offenses were monotonically (negatively) related to perceived risk of arrest. They also found that perceptions of peer delinquency were negatively associated with perceived risk (see also Pogarsky et al. 2004). Each of these findings is consistent with Bayesian updating. Finally, Matsueda et al. (2006) also estimated a rational choice model of crime, finding that perceived risk of arrest was significantly associated with subsequent offending. Specifically, they found that, on average, a 10 % increase in perceived certainty of arrest was associated with a 3 %

decrease in theft and violence. Lochner (2007) reported similar findings using data from the National Longitudinal Survey of Youth 1997 and National Youth Survey. He found that respondents in both surveys updated their risk perceptions in ways consistent with Bayesian expectations. Offenders who got away with crime reported lower risk of arrest, and those who got arrested reported higher risks. Lochner (2007) also found that naïve non-offenders held the highest perceptions of risk certainty. When comparing perceived certainty to actual offending, he strikingly found almost the exact same pattern as Matsueda et al. (2006): using the NLSY97 data, he found that a 10 % increase in perceived certainty of arrest was associated with a 3 % decrease in theft. The similarity of these results builds confidence in the deterrent effect of perceived certainty of arrest on future offending.

The most recent study of Bayesian updating, conducted by Anwar and Loughran (2011), examined serious juvenile offenders enrolled in the Pathways to Desistance Study. They found that offenders in their sample appeared to update their risk perceptions following a Bayesian model. Offenders who committed crimes and were arrested for them reported an average of 6.3 % higher-risk perceptions than those who committed crime but were not arrested. This is an important finding, as it suggests that risk perceptions remain malleable even among serious offenders, a population often written off as irrational or impulsive and thus outside policy intervention.

The weight of recent evidence thus supports Bayesian expectations when applied to updated risk perceptions and personal experiences of offending and sanctioning. As mentioned above, one might also ask if subjective sanction perceptions are rooted in objective rates of arrest and punishment. For example, does increased police arrest activity alter offenders’ subjective arrest perceptions? Interestingly, Lochner (2007) observed that the risk perceptions of his NLSY97 sample were fairly unresponsive to county-level arrest-per-crime rates. Combined with his findings of individual experiential effects, the lack of a contextual effect suggests that proximate conditions

are more important determinants of perceptual change than macro-contextual conditions. Kleck et al. (2005), in a phone survey of respondents in 300 counties, also found little correspondence between individuals' estimates of police clearance rates and the actual clearance rates in those counties. However, Apel, Pogarsky, and Bates (2009) did find an association between changes in a school's disciplinary regime and students' perceptions of discipline, suggesting that individuals' risk perceptions are responsive to contextual conditions in at least some instances. The limited and mixed findings in this area suggest that further research is required to connect objective sanction risk in a given geographic area to individual risk perceptions.

### Extralegal Benefits and Costs

Research of the linkage between perceptual change and offending should also extend beyond formal sanctions. Theory and qualitative evidence suggest that other costs and rewards are equally, if not more so, related to criminal decision-making. As mentioned previously, Becker's (1968) criminal utility model includes both subjective costs and benefits in criminal decision-making. This utility calculus lies at the heart of rational choice theories of crime (Clarke and Cornish 1985). The relative neglect of crime's perceived returns, and how these perceptions are adjusted over time, is a serious omission both for etiological and policy reasons. Understanding crime's perceived benefits will likely provide valuable insights for understanding criminal motivation, while also pointing to potential interventions that downwardly adjust individuals' positive perceptions of crime over time.

In his phenomenological examination of violent and property crime, Katz (1988) provided perhaps the most detailed account of crime's "seductive" psychic and social rewards. He explored the "sneaky thrills" of shoplifting and the social status associated with the "badass" gang member. Such perceived benefits are intimately linked to the criminal event and may override the certainty, celerity, and severity of perceived punishment. Indeed, Matsueda et al. (2006) found that the perceived excitement and "coolness" of offending were stronger predictors of crime than perceptions

of arrest. Missing from their analyses, and generally overlooked in empirical analyses of criminal perceptions, are the origins and dynamics of crime's perceived benefits as predicted by Bayesian learning.

Such analyses would appear particularly relevant for understanding individual trajectories of drug use. The objective risks of apprehension for drugs are low and likely swamped by perceptions of their psychic and social returns. In his classic *Becoming a Marijuana User*, Howard Becker (1953) described the learning process associated with marijuana initiation. In interviews of marijuana-smoking Jazz musicians, he found that users often entered their first marijuana experience uncertain of the drug's effects. Moreover, marijuana's psychopharmacological properties may result in potentially ambiguous physical effects, such as hunger, paranoia, dizziness, and euphoria, or no effects at all. Becker argued that the presence of more knowledgeable peers help the initiate translate these effects into a pleasurable experience worth repeating, or these peers may push the initiate to smoke again if he or she experienced no discernible effects the first time. In these ways, perceptions of fear and uncertainty are updated into fun and excitement. The change in marijuana's perceived rewards upon initiation thus provides a particularly fruitful context for studying Bayesian updating.

Costs other than formal sanctions may also be important for understanding criminal decision-making. McCarthy and Hagan (2005) argued that the proximal fear of physical harm likely overrides perceptions of punishment for offending decisions. In their qualitative and quantitative study of street youth living in Toronto and Vancouver, they found that perceptions of danger deterred youth from theft, drug dealing, and prostitution. Interestingly, they found little evidence for the threat of legal sanctions, but, consistent with Matsueda et al. (2006), they did find that perceived excitement predicted theft and drug dealing. Note, however, that the cross-sectional nature of their data did not allow them to directly address the Bayesian updating hypothesis. More work is required to test if repeated exposure to crime and delinquency increases or decreases perceived danger.

## Life-Course Transitions and Cognitive Change

The growth in life-course theories and research has opened up new avenues for understanding Bayesian updating processes. An axiom of life-course perspectives is that life events can meaningfully alter individual behavioral trajectories. Although the dominant explanation for how events become “turning points” in criminal trajectories is through external social control mechanisms (Sampson and Laub 1993), cognitive change is increasingly the focus of life-course criminology. Giordano et al. (2002) provided a symbolic interactionist theory that connects life-course transitions, cognitive transformation processes, and criminal desistance. Their central premise was that desisters are likely to reflect on their past and present circumstances and create new conventional identities. Life-course transitions, such as marriage, incarceration, and parenthood, then become “hooks for change” in this cognitive process. Interpreted from a Bayesian perspective, significant life events should provide new evidence by which prior perceptions are updated to shape future behavior. As Maruna (2001) points out, however, whether such life events positively or negatively affect self-perceptions is extremely difficult to predict. For example, a drug addict may interpret a friend’s overdose as (1) the final impetus needed to “get clean,” (2) unrelated to their own fate, or (3) a reason to use drugs to manage the resulting grief. The subjectivity of experience, and the meaning of experiences derived in contextualized social interactions, complicates an understanding of perceptual change and use of formal models of Bayesian inference. Identifying the origins of such heterogeneity is challenging but worth future investigation.

## Conclusion and Future Directions

Under many guises, Bayesian updating remains an influential concept for criminological theory and research. Within the deterrence literature, researchers have consistently documented the

experiential effect of crime on reduced risk perceptions, while also documenting an association between sanction perceptions and future offending. Rational choice studies have extended the study of perceptual dynamics to extralegal domains, including changes in perceived excitement, social status, monetary rewards, and fear of physical danger. More recently, life-course research has explored the impacts of life events on cognitive changes and desistance processes. All of these research strands continue to produce contributions for both criminology and the understanding of individual perceptual dynamics over time.

The obstacles facing perceptual research also provide opportunities for scientific advancement. As mentioned previously, a continuous challenge facing research in this area is disentangling experiential from perceptual effects. For example, an individual’s experiences in crime should change his or her perceptions of its costs and benefits, which should then impact his or her probability of future crime. Longitudinal designs are clearly necessary for distinguishing these reciprocal processes. One attractive strategy might be to design an experiment where individuals are randomly exposed to sanction risk information, such as local arrest statistics, to examine if their pretest arrest perceptions and behavioral intentions are updated upon receiving new information. Another potentially fruitful research avenue would focus on perceptual changes surrounding criminal onset. Prior to initiation, individuals must rely on less-than-optimal information sources – such as peers, the media, or experience with related behaviors – to formulate expectations for a novel behavior. But the inadequacy of prior information may result in actors initiating a behavior under extreme uncertainty. The situational contexts of initiation, and the physical experience of that event, are then highly influential in revising perceptions from uncertainty to increased clarity. The large amount of perceptual change potentially associated with initiation makes understanding this event critical for our knowledge of Bayesian updating. Although measuring the perceptions and contexts at the point of initiation would be difficult, it holds tremendous potential for broadening our insights of dynamic risk perceptions.

Future research is also required to order individuals' perceptions of crime's costs and benefits. Prior research has demonstrated that crime's perceived extralegal costs and benefits often exceed the effects of perceived formal sanctions in predicting future criminal behavior. What is needed is research that identifies the relevant subjective perceptions of crime and helps rank order or weight these perceptions while also examining how such orderings may change over time. For example, the perceived social benefits of drug use may be a strong predictor of drug initiation, but upon initiation, such perceptions may be overridden by the perceived fun and excitement associated with getting "high." Further, perceptions of pleasure may fade over time and be replaced by the perceived costs of heavy use. Bouffard (2007) has taken steps toward identifying preference orderings using subject-generated perceptions of criminal consequences, but more work is required to understand the dynamics of such orderings given individual experience.

More broadly, greater theorizing is necessary for the generative process of risk perceptions. Aside from personal exposure and vicarious experiences through peer networks, few studies have focused on the origins of offending perceptions and their changes over time. It is clear that non-offenders' perceptions differ greatly from offenders' perceptions, and that individuals transitioning from the former to latter typically experience substantial perceptual shifts. However, more research should center on the information sources associated with each status and how naïve perceptions are updated or negated with offending decisions or experiences. Such investigations have substantial implications for interventions aimed at manipulating perceptions to prevent initiation (general deterrence), or increasing offenders' perceived risks to prevent future offending (specific deterrence).

Finally, research should also continue to isolate the effects of salient life events (e.g., marriage, parenting, employment, military service, incarceration, etc.) on changing risk perceptions. Symbolic interactionist perspectives of desistance (Maruna 2001; Giordano et al. 2002) have taken strides in presenting theoretical models and qualitative evidence for how life

events relate to cognitive transformation and desistance, but further quantitative evidence is needed to validate this line of inquiry and calibrate risk perceptions so that they may be formally analyzed using Bayesian inference. Prospective studies of sanction perceptions and prominent life-course transitions would add to an understanding of desistance while also testing the Bayesian learning hypothesis. Such investigations will provide greater clarity to the cognitive processes and decision-making associated with "knifing off" a criminal past and the construction of a conventional future (Maruna 2001).

## Related Entries

- ▶ [Certainty, Severity, and Their Deterrent Effects](#)
- ▶ [Cognitive Forensics: Human Cognition, Contextual Information, and Bias](#)
- ▶ [Cognitive/Information Processing Theories of Aggression and Crime](#)
- ▶ [Deterrence: Actual Versus Perceived Risk of Punishment](#)
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- ▶ [Economic Theory of Criminal Behavior](#)
- ▶ [Integrating Rational Choice and Other Theories](#)
- ▶ [Rational Choice, Deterrence, and Crime: Sociological Contributions](#)
- ▶ [Rational Choice Theory](#)

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## BCS

- ▶ [British Crime Survey](#)

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## Behavioral Health Courts

- ▶ [Mental Health Courts](#)

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## Behavioral Investigative Advice

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## Synonyms

[Crime scene profiling](#); [Criminal investigative profiling](#); [Criminal personality profiling](#); [Criminal profiling](#); [Investigative psychology](#); [Offender profiling](#); [Psychological profiling](#)

## Overview

Behavioral Investigative Advice represents the UK approach to the provision of advice and support to major crime investigations from a behavioral science perspective. Although the foundations of Behavioral Investigative Advice are built upon such precursor influences as criminal investigative analysis, offender profiling, and investigative psychology, the emergence of Behavioral Investigative Advice should be recognized more as a qualitatively distinct *profession*, than a variation of technique.

All such behavioral support to UK policing is delivered exclusively by a nationally funded cadre of professional Behavioural Investigative Advisers (BIAs) who have significantly widened the scope from the traditional, specific view of “offender profiling” to a discipline which now encompasses a broad range of scientifically based yet pragmatic activities related to supporting police investigations, based on replicable, transparent, and valid knowledge and research.

While elements of this approach and philosophy have begun to evolve within other (predominantly European) countries, it is emphasized that the formal recognition of Behavioural Investigative Advisers is a UK-specific initiative and should not be misinterpreted as any form of internationally recognized standard.

## Brief Historical Overview

The term “offender profiling” was first regularly used by members of the FBI Behavioural Science Unit who defined it as the process of drawing inferences about a suspect’s characteristics from details of his or her actions exhibited during the commission of a crime.

Critical review of these initial efforts however drew attention to the lack of systematic basis and empirical evidence supporting the claims made. David Canter, a UK psychologist, was highly influential in advocating a more robust scientific psychological approach to offender profiling, and in recognizing the broader utility of providing

investigative support to serious crime enquiries from a behavioral science perspective.

In 1992, the Metropolitan Police service commissioned research into the investigative usefulness of such offender profiling, following concerns that despite over 200 British Police inquiries utilizing such services in the preceding decade, no reliable or valid scientific assessment has been conducted to evaluate its usefulness.

While the explicit focus of this research was directed toward the methodologies employed and the resulting usefulness of profiling, it also provided important signposts toward the challenges facing this emerging discipline within the UK, most significantly in the observation that no governing body for the regulation of professional or ethical standards existed, and that there was no formally recognized program for the training of UK practitioners in profiling techniques.

However, it was not until 2001 that a significant watershed in such endeavors occurred, most conspicuously evidenced by the replacement of the term “offender profiler” with “Behavioural Investigative Adviser” (BIA). A set of common standards and working conditions were introduced, making explicit the responsibilities of BIAs, including: administrative protocols, commitment to producing written reports, agreement to have work annually audited and evaluated, and acceptance that the results of such audits would determine the retention or removal of their authority to provide Behavioral Investigative Advice within the UK.

The introduction of these new working conditions had a twofold effect. In making explicit the need to document all advice provided, not only were quality assurance issues addressed, but the true extent of behavioral science provision to UK investigations could be known for the first time, allowing for detailed qualitative and quantitative analyses of all aspects and supply and demand. The availability of such management information led to a formal strategic review of UK Behavioral Investigative Advice in 2010, which provided a clear overview of the current status of the discipline, clarified current and potential future demand, made explicit the current and anticipated threats to the effective delivery of the

service and considered regulatory and governance issues, including minimum performance standards. It concluded with a proposed model of management and delivery of Behavioral Investigative Advice which significantly changed the landscape of such activity within the UK.

Today, all behavioral science contributions to major crime investigations are delivered exclusively by a nationally funded cadre of full-time professional Behavioural Investigative Advisers (BIAs).

### International Perspectives

While one of the key successes of the UK approach to Behavioral Investigative Advice is the effective integration of the BIA into the investigative arena, the UK model differs significantly from many of its international contemporaries in the philosophy of individual specialism within a multidisciplinary approach. Whereas in many countries, the “ profiler ” assumes the role of investigator, whose behavioral science knowledge and expertise represents but one facet to an overall “ investigative consultancy ” role, in the UK, such expertise is far more discrete. The BIA is concerned only with contributions based on behavioral/psychological principles, and integrates such expertise with other specific experts, including those focused exclusively on investigative doctrine. An additional benefit of such approach is that unburdened by the same training and experiences of police investigators, the BIA has the benefit of a more objective and “ different ” view of the case. While approaches in which seasoned investigators are “ trained ” in behavioral science have their own merit, the UK ’ s approach favors the behavioral scientist gaining a sufficient and relevant understanding of the investigative process, but delegating the more “ traditional ” investigative advice to an “ expert ” investigator.

### Investigative Contribution

Behavioral Investigative Advice has the potential to contribute to many aspects of the investigative

process and may take many forms throughout the life of the enquiry. While all of the products and services available offer tactical or strategic solutions in their own right, all are underpinned by a broader philosophy of adding value to the decision-making of the Senior Investigating Officer (SIO), through an enhanced understanding of the offense and offender from a perspective different from that routinely employed within major crime investigation teams. Such differences in perspective can be broadly characterized as evidence (SIO) versus understanding (BIA), although both are directed at supporting the single goal of case resolution. It is this additional perspective and associated expertise which should be recognized as the critical success factor of Behavioral Investigative Advice.

While the prediction of those facets of an unknowns criminal’s background which are amenable to investigative action serves as a great asset in major crime enquiries, this does not represent the only contribution of contemporary BIAs. Analysis of the type and scope of reports produced by the national cadre of UK BIAs reveals a steady decline in producing “ offender profiles, ” from over 60 % of all operational activity at the launch of the unit over a decade ago to a little over 10 % in 2009. Such figures do not however imply that such inference generation regarding offenders is no longer undertaken on a routine basis, but rather that such inferences often form the basis of a more bespoke service to SIOs, tailored to their specific investigative needs.

However, the implicit assumption that all the additional services provided by BIAs are dependent upon such prescriptive predictions concerning the unknown offender is also inaccurate. Many of the products and services, as outlined below, are wholly independent of any such speculative inferences regarding the type of unknown person who has committed the offense in question.

### Crime Scene Assessment and Hypothesis Generation

Critical to the provision of many BIA products and services is a fundamental understanding of the offense, and hence the offender(s), from a behavioral perspective. This is achieved

through crime scene assessment (CSA) and hypothesis generation. This involves a thorough examination of the criminal event and generating hypotheses based upon the available information. Support for or against each of the possible hypotheses is then forwarded with reference to psychological theory, relevant research findings, and experiential knowledge, with information gaps identified that will further enhance the process. The benefits of such an approach are that specific hypotheses regarding the offense can be tested in a systematic, reasoned, and objective fashion, based upon sound supporting rationale. Such a methodology is consistent with, and provides a tangible product of the investigative philosophy promoted within national policing guidance. Recent practice advice advocates the application of scientific principles and methods as core investigative doctrine to be adopted across the UK police service (ACPO 2005).

### **Offense Linkage Analysis**

In the absence of any physical evidence linking a number of crimes, the contribution of a behavioral analysis may be significant. Research into behavior exhibited by offenders during the commission of their crimes has led to a greater understanding in consistency and variability of offenders when committing a series of offenses. Through national mandates to collect and analyze a range of sexually motivated offenses throughout the UK, BIAs have access to the largest collection of data of its kind in the UK and one of the largest in Europe via the ViCLAS (Violent Crime Linkage Analysis System) database (the collection criteria cover homicide, serious sexual assault and abduction offenses, including attempts). The creation of such large datasets allows for validation of initial hypotheses regarding linkage, as well as providing statistics with regard to the frequency of individual behaviors, and more significantly, combinations of behaviors.

### **Predictive Profiling**

Drawing inferences in relation to a particular offender on the basis of a comprehensive crime scene assessment is a process commonly referred

to as predictive (or offender) profiling. However, it is important to recognize that in contrast to its media portrayal, the focus of modern day predictive profiling is very much on investigative utility rather than psychological interest. Perhaps the most widely held misconception regarding the role of the contemporary BIA surrounds the insistence that speculative predictions concerning the unknown criminal's *personality* are routinely made. They are not. Not only is such activity lacking scientific reliability and validity, in itself it serves very little, if any purpose in assisting police officers to identify the offender. Despite the tabloid appeal of psychological musings over traits such as narcissism, misogyny, introversion, and the like, the lack of any police database recording such facets of the criminal population makes them somewhat limited in terms of investigative utility.

A BIA will endeavor to make accurate assessments in relation to objective and verifiable elements of an offender's background. Consideration will be given to the likely age of the offender, whether he is likely to have previous police convictions and if so what these may be, and where he may reside or be based. The goal of the BIA in this process is to allow the SIO and the enquiry team to focus on areas of investigation most likely to identify the offender. It is perhaps only in the form of investigative suggestions and interview strategy development where BIAs may on occasion consider more trait-based interpretations and their associated behavioral implications at the investigative level (see below).

### **Nominal Generation**

An extension to predictive profiling, suspect generation may be undertaken by the investigation under the guidance of a BIA. By taking the predictions made in relation to an offender's likely background characteristics, it is possible to utilize local crime and intelligence databases as well as the Police National Computer (PNC) in order to generate pools of potential suspects. Outside of the criminal arena, in some cases, it may also be possible to highlight additional potential suspect pools on the basis of advice offered by a BIA, such as those from housing lists, voters register,

employment records, and so on. This will always be evaluated by the BIA on a case-by-case basis.

### **Prioritization Matrices**

Again, an extension of the predictive profiling process, a prioritization matrix takes the individual predictions made in relation to the proposed background of the unknown offender and integrates them in the form of a matrix. Each facet of a potential suspect will be given a numerical value such that nominals within an enquiry can be objectively scored and ranked in terms of how well their background characteristics fit with those proposed for the unknown offender. This process is of particular utility if an investigation wishes to undertake an intelligence-led DNA screen or is seeking to prioritize many hundreds of potential suspects from a cold case enquiry or mass media appeal. Where possible, a suspect prioritization matrix will be developed so as to integrate the behavioral predictions (in relation to an offender's background) with a geographic profile in relation to their most likely area of residence.

### **Investigative Suggestions**

In line with the BIAs intention to make their report as investigatively focused as possible, it is normal practice now for BIAs to offer direct investigative suggestions on the basis of the information supplied to them. It should be recognized that while the BIA role is very much an "advisory" one, they do typically possess significant experience of major criminal investigations (the national cadre of BIAs have an accumulated experience of over 1,000 cases). This experience combined with their ability to draw logical inferences on the basis of an offender's behavior means that they will offer investigative suggestions to the SIO as a routine part of their report. Suggestions are made strictly on a case-by-case basis and should always be accompanied by a clear supporting rationale.

### **Interview Advice**

Contributions from a behavioral perspective can provide a significant enhancement to the development of interview strategies. Such contributions can be classified as either interviewee-specific

advice or crime-scene-specific advice. With respect to the former, more traditionally recognized interviewee-specific advice, an identification of salient behavioral characteristics of the individual to be interviewed can inform strategies to maximize interaction and the quantity and quality of information disclosed and minimize confabulation and fabrication. The more contemporary contribution from a crime-scene-specific perspective provides additional guidance to interviewing officers in understanding the offense; will identify any gaps, inconsistencies, and ambiguities in the information; and provide a template against which investigative hypotheses can be systematically tested during interview. It is however essential that interview advice gained from a BIA is complemented with advice from an appropriate in-force or ACPO (Association of Chief Police Officers) Approved Interview Adviser to ensure compliance with relevant legislation and support of the overall investigative aims, objectives, and strategies.

### **Media Advice**

In certain circumstances, it may be advisable to seek opinions from a BIA in relation to utilizing the media in major investigations. This advice is intended to maximize the use of the media when, for example, making appeals to the public or releasing information about an offense, but also to enable SIOs to better understand the potential effects of the media on the behavior of an offender.

### **Familial DNA Prioritization**

The recently introduced technique of Familial DNA (fDNA) searching allows investigations to search for relatives of an unknown offender in cases where a full DNA profile is available at the crime scene that does not match anyone on the National DNA Database (NDNAD). It works on the general principle that people who are related are likely to have more DNA in common than those who are not, and thereby seeks to identify individuals on the NDNAD who have a greater genetic similarity to the unknown offender and hence a greater potential to be related. The BIAs can utilize a sophisticated process that allows the

resulting lists from forensic science providers to be re-prioritized with respect to age and geographic association. By adjusting the genetic prioritization to take into account an individual's age and geographic association, those individuals who are more likely to be relatives of the offender should become more readily identifiable from the more general backdrop of the lists, while still preserving the appropriate weight assigned to them through their genetic similarity.

### **Search Advice**

BIAs may also be able to contribute to any search activity within an investigation. An enhanced understanding of the offense and/or likely offender can inform search parameters for forensic evidence, witnesses, CCTV, etc., and in combination with relevant research findings assist in prioritizing potential body deposition sites. Additionally, an enhanced knowledge of specific psychological or criminal dispositions may assist in broader search considerations, such as briefing search officers as to the potential significance (from an intelligence perspective) of items which may be observed within the course of more evidential searches.

### **Decision Support**

As highlighted above, every contribution to the investigation of serious crime from a behavioral science perspective has the single underlying goal of supporting investigative decision-making. While the above provides a more prescriptive summary of the individual products and services that offer explicit tactical and strategic solutions in their own right, the more implicit role of the BIA on the decision-making process is perhaps a less obvious, but nevertheless critical contribution.

The field of decision-making is well established within the psychological literature and offers a multitude of well-established influences on decision-making. The focus of BIA contribution is directed toward those factors which are commonly encountered within major crime investigations, namely, heuristics and biases. It is cognizance of these factors within an investigative environment that underpins an implicit but often

overlooked contribution from BIAs and further highlights the distinction between “traditional” paradigms of profilers assisting investigators with “offender profiles” and the contemporary UK approach of discrete, multifaceted, professional psychological expertise.

The ability for investigators to make rational decisions in serious crime enquiries is influenced by the same heuristics and biases that affect all of our day-to-day judgments. Base rate fallacies, representativeness heuristics, illusory correlations, clustering illusions, availability heuristics, anchoring and adjustment, belief persistence, confirmation bias, and selective information search, all have the potential to undermine even the most astute of investigators' decision-making capabilities. While such influences are by no means any more (or indeed less) prevalent among Senior Investigating Officers than among the general population, the consequences of error within a murder enquiry are of arguably greater consequence than the majority of more mundane daily decisions.

It is a critical role of the contemporary BIA to mitigate against such errors of decision-making through the implicit integration of such considerations within all advice and support offered. While such cognizance of these bias and heuristics does not form a “product” or “service” in its own right, it may be argued to represent one of the biggest contributions from BIAs, providing the foundations on which the goal of supporting investigative decision-making can be soundly built.

This requires a sound theoretical understanding of common biases and heuristics, an ability to recognize their presence and potential negative impact within the specific environment of a major incident, the capability to diplomatically address such errors, and an awareness of and access to relevant data and information to optimize subsequent investigative decision-making.

### **Working Practice and Process**

All Behavioral Investigative Advice within the UK is provided upon request, and although

advocated on Senior Detective training programs and within national guidance manuals, does not represent a procedural requirement, but rather a carefully considered investigative decision.

Once a BIA has been engaged by the Investigating Officer, a meeting takes place where an exchange of information and views leads to the agreement of explicit terms of reference. These terms are established in writing and clearly articulate what is expected of both parties. This is particularly important with regard to ownership of any material and confidentiality, which is expected in instances where a BIA might have privileged access to sensitive information about crime scenes and/or victims. This should, for example, inhibit disclosure of certain information to the media without the SIO's permission. Terms of reference should also provide similar assurances to the BIA that all relevant case materials will be made available, and any developments which may support, refute, or refine the advice proffered be communicated as soon as reasonably possible.

It is at this stage that the precise nature of any behavioral science support will be discussed and agreed. As has been made explicit above, the potential products and services from contemporary BIAs are far broader and more diverse than either the media or naive academics would proffer, and should not be regarded as the exclusive generation of inferred offender characteristics, either as a product in its own right or as the necessary foundation to other contributions.

In order for the BIA to undertake their behavioral analysis and provide timely advice, a variety of case materials will be required from the investigation. The provision of these assist the BIA to commence their analysis and return a detailed report to the investigation within a timeframe that maximizes the utility of the advice (i.e., as soon as practically possible, but with cognizance to the investigation's overall strategy and resourcing and competing BIA demands from other cases). Although by no means exhaustive, and with cognizance that different enquiries will generate different information and different products and services require different source materials, the following represents a summative overview of the material required and utilized.

- Full verbal case briefing and access to the SIO/ investigation team
- All relevant statements
- Crime report
- Any officers' reports/status reports
- Pathology and forensic reports/findings
- Full set of crime scene and postmortem photographs (where applicable)
- Available analysis (e.g., telephony, palynology, entomology, etc.)
- Relevant maps
- Visit to all relevant scenes

It is worth highlighting that the scene visit represents a critical component of the process as it allows the BIA to gain a fuller understanding of the decision-making process of the offender. Such information is not routinely available from crime reports, statements, or photographs, where often the evidential focus is too restrictive to provide the necessary "behavioral" perspective.

In addition, the scene visit is typically complemented by a visit to the incident room/enquiry team, allowing the BIA to ask questions concerning the demographics and crime profile (i.e., the type, frequency, patterns, and interpretation of previous criminal activity) of the area, as well as to get a full briefing from the SIO or nominated member of the investigation team. It is therefore of great importance that in addition to making the necessary case documentation available to the BIA, officers who meet with the BIA and who accompany them to the scene(s) should have a good knowledge of the relevant areas and of the offense(s) for which the support has been requested.

Once this information has been collated, the BIA (except in rare circumstances involving critical incidences or "crimes in action") departs the incident room and returns to their place of work to critically review the information and begin report preparation. Establishing direct lines of communication with relevant officers within the enquiry removes any necessity to remain physically located within the incident room, which may be viewed as counterproductive when one considers the resources required by the BIA, the priorities of the investigative team, and the advantages of distanced objectivity. The BIA is reliant upon both the statistical information contained within relevant datasets (which for

security reasons are not accessible outside of secure national policing premises) and the extensive academic research libraries they have collated to inform and support inference generation and investigative strategy development. The capacity to reflect and synthesize these resources with the known case material is greatly enhanced by such remote working, eliminating both the distractions and potential biases inherent in major incident rooms.

Once the analysis is complete, a report will be forwarded to the enquiry with the explicit recommendation that the document should not be viewed as the completion of the BIA's input, but rather provide the starting point for a dialogue between the investigator and the BIA. This is critical to ensure the SIO's understanding of the inferences and recommendations made and to promote understanding that such conclusions should be continually evaluated against additional forthcoming information.

The importance of the BIA becoming part of an advisory team is emphasized by the BIA. This ensures all experts are aware of the findings, opinions, and advice of other members of the team, allowing for hypotheses to be supported, rejected, or refined, and to prompt searches for information in other directions. Discussions with specialists from other disciplines can also act as a useful safeguard against too narrow a focus in an investigation and can encourage officers to continue to look for alternative explanations for events.

Having decided to seek assistance, the SIO should remain critical and reflective of any information or opinion put forward by BIAs. He or she should be ready to explore and challenge assumptions made as well as pointing out any inferences that are inconsistent, contradictory, or logically incoherent. Only by thoroughly discussing the opinion in this way will the SIO be able to gauge the validity of the BIA contribution to the investigation. The SIO should ensure that the BIA's opinion is fully explained in order to know what weight to assign to the information provided. Asking the BIA to justify the way in which they have developed their methodology and derived any inferences should ensure their involvement in any investigation is transparent and explicit. SIOs are urged to look beyond the psychological

interest factor toward the investigative utility of the advice and are regularly reminded by BIAs to ensure any advice proffered achieves the highest possible standards of quality and effectiveness.

It is of utmost importance that any behavioral advice provided to an investigation is utilized in the manner in which it was intended. In particular, it should be remembered that advice is typically offered on the basis of what is most likely or what should be prioritized. Behavioral Investigative Advice does not deal in absolutes and as such advice from a BIA should always be evaluated carefully by the SIO to ensure that its impact on the investigation is proportionate.

### **Expert Evidence**

Closely aligned to the above discussion, it is made explicit within BIA reports that they do not constitute expert evidence. BIA reports deal in probabilities, not certainties and provide the most likely "type" of individual in order to systematically prioritize lines of enquiry. Due to the probabilistic nature of the findings, while the majority of recommendations will prove effective for the majority of cases, it is to be expected that in a minority of cases, the individual responsible will demonstrate significant variance with the reported probabilities. Even if a significant overlap exists between the "profile" and defendant, the best that could be inferred is that the defendant has the characteristics which have been suggested as most likely from a behavioral analysis of crime scene and related information. This should be deemed insufficiently relevant and reliable and too prejudicial to be received by the court as evidence of the defendant's guilt. It is for this reason that it is made explicit that a BIA's report is not fit for purpose in attempting to provide evidence of an individual's involvement or guilt, or conversely as evidence that a specific individual cannot be responsible for an offense. This is not a failing of BIA advice, rather recognition of its investigative utility as a means of better understanding an event and informing and prioritizing investigative decision-making and actions. As such a "profile" should never be



attempted to be used as evidence with regard to identity. However, the wider discipline of Behavioral Investigative Advice may, under specific circumstances, be able to contribute to the court process, although the exact parameters and process for such a contribution are at present unclear and may be found to fall foul of the same obstacles as “profiles” if tested (for a review of the evidential obstacles facing “offender profiling,” see Omerod and Sturman 2005).

## Conclusions and Future Directions

Behavioral Investigative Advice has developed in the UK over the past decade as a distinct profession which has significantly widened the scope from the traditional, specific view of “offender profiling” to a discipline which now encompasses a broad range of scientifically based yet pragmatic activities related to supporting police investigations, based on replicable, transparent, and valid knowledge and research.

It is acknowledged that while perceptions of such activity may be misguided and outdated, both predecessors and many contemporary practitioners are perhaps still guilty of enthusiasm over professionalism. However, such experiences are perhaps inevitable in any emerging discipline and should not continue to represent the stick that beats contemporary efforts into submission.

Such contemporary optimism is bolstered by many years of frontline experience, hundreds of case consultations, and, significantly, by the policing community. Over the past decade, Senior Investigating Officers have gone from blind acceptance of an unproven innovative technique, through suspicion and virtual dismissal, to the more balanced mid-ground of critically and judiciously evaluating the potential such contributions BIA’s make within the overall investigative process.

This contemporary policing environment not only safeguards against the excesses and failures of the past, but demands the very evidence-based practice that contemporary BIAs have recognized as critical to the continuing development and professionalization of the discipline. This cannot be achieved by the practitioners alone. The research

community has a key role to play in such endeavors, but activity must be focused on solution-oriented research of direct relevance to the practitioners. Historically, BIAs have had to rely on what has been published within disparate research domains (e.g., psychiatry, criminology, environmental psychology, forensic science, medical science, etc.) and tease out the small morsels of relevance to investigative application. What is required is a much more integrated approach where practitioners and academics better understand one another’s aims and objectives and produce findings of direct relevance to real world application. It is acknowledged that many academics will view such bold proclamations as somewhat naive and fanciful, protesting that they have been advocating precisely the same intentions but that such rhetoric is never backed up with access to the masses of relevant data held by the police. This too is changing. The emerging investigative philosophy of a more scientific approach has led to not only the development of larger, centralized, and more sophisticated data collection processes, but also a greater willingness to share such data with the academic community.

In addition to broader knowledge and research strategies aimed at improving the way in which the police service create, assure, share, and use knowledge in support of practice and decision-making, greater access to data held within the various national databases together with clear articulation of specific research questions has begun to develop such collaborative activity. It is hoped that such initiatives, viewed in tandem with an enhanced understanding of the contemporary philosophy of Behavioral Investigative Advice, will encourage further solution-oriented research and continue to inform future practice.

## Related Entries

- ▶ [Behavioral Science Evidence in Criminal Trials](#)
- ▶ [British Police](#)
- ▶ [Cognitive Forensics: Human Cognition, Contextual Information, and Bias](#)
- ▶ [Criminal Investigative Analysis](#)
- ▶ [Evidence-Based Policing](#)

- ▶ [Expert Witnesses: Role, Ethics, and Accountability](#)
- ▶ [Investigative Psychology](#)
- ▶ [Linkage Analysis for Crime](#)
- ▶ [Profiling Arson](#)
- ▶ [Psychological Autopsy of Equivocal Deaths](#)

## Recommended Reading and References

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## Behavioral Learning

- ▶ [Social Learning Theory](#)

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## Behavioral Linkage Analysis

- ▶ [Linkage Analysis for Crime](#)

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## Behavioral Management in Probation

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## Synonyms

[Case management](#); [Community supervision](#); [Contingency management](#); [Evidence-based supervision](#); [Probation](#); [RNR Supervision](#)

## Overview

Behavioral management is the newest framework for community supervision; it is a hybrid combining the traditional theoretical approaches of law enforcement (monitoring and compliance) and social work (resource broker and/or counseling). The social work perspective was more commonplace in the USA until the 1970s and is currently slowly eroding in other countries over the last several decades. The erosion is part of the diminishing support for rehabilitation-type programming for offenders as well as the increased concerns about offender accountability and public safety. Enforcement and compliance management are now the more predominant framework in the USA with other countries emulating this style of supervision given the emphasis on offender accountability. As a hybrid approach, behavioral management arms the probation officer with a new toolkit that recognizes the balance between offender change and accountability, and it offers new strategies for managing the offender in the community that incorporates evidence-based practices and treatments (“what works”). The behavioral management supervision model is based on a theoretical framework that offender change is due to a trusting, caring relationship between the offender and the officer where the emphasis is on structure and accountability. The officer facilitates offender change through therapeutic techniques of individualized case plans, cognitive restructuring, and graduated responses to positive and negative behaviors.

This chapter reviews the literature on the effectiveness of community supervision and then explores the concepts of behavioral management with examples from existing efforts across the globe. Next this chapter discusses the policies, programming, and developmental issues that affect the likelihood of behavioral management becoming predominant in supervision settings. This is critically important since a behavioral management framework requires organizational strategies to emphasize an altered mission and goal for the supervision organizations to encompass structure along with programs and services to alter offender outcomes.

## Evolving Nature of Community Supervision Models

Community supervision is the broad category that refers to any correctional control in a community setting. This generally covers pretrial (preadjudication), probation (sentence that involves community control), and parole (post-incarceration) as well as case management of offenders in the community. Probation had its early roots as a humane method of dealing with alcoholics. John Augustus, the grandfather of contemporary probation in the USA, realized that alcohol abuse contributed to workers being unreliable. Probation was conceived as a court service designed to reduce the use of jail sentences for first-time offenders. The early era of probation was focused on alternatives to incarceration and assisting those with needs (mostly alcohol abuse). In the 1970s, more emphasis was placed on oversight (law enforcement) and enforcement of conditions in the USA as support for rehabilitation dwindled (Garland 2001). The current emphasis on enforcement of the conditions of release (i.e., generally reporting, informing the officer of their whereabouts, and other emphasis on controls) dominates probation services.

Probation supervision is built on suppressing criminal behavior through a contact approach. Contacts, or face-to-face meetings between offenders and community supervision officers, are the main tool of overseeing offender behavior. While on probation, the offender has a series of liberty restrictions that define the requirements of supervision. Some of these restrictions are imposed by the court (for probation or pretrial supervision) or the parole board (for parole). Others are part of standard supervision conditions such as limiting activities and curfews, requirements to report to the supervision officer, no possession of guns, and so on. That is, the offenders have a set of rules to guide their behavior. The purpose of supervision monitoring is to improve compliance with these conditions. The notion is that offenders will be deterred from further criminal behavior with the threat of incarceration (due to failure to comply with the

conditions of release). The core component of supervision – contacts – has been empirically tested in a limited fashion, primarily with studies of intensive supervision (more contacts), where frequency of supervision has not resulted in improved results (MacKenzie 2006; Petersilia and Turner 1993; Taxman 2002). A recent study of low-risk offenders (i.e., offenders that have a low probability of further criminal justice involvement) found that increasing the number of contacts with supervision officers did not result in reductions in recidivism (Barnes et al. 2012). There have been no experiments or studies on whether being on probation (i.e., having required contacts between the probation officer and offender) or having no oversight has any impact on future offending behavior. This limits the ability to understand whether supervision suppresses offending behavior or how supervision leads to more desirable impacts on offender behavior. The question of what type of supervision is most effective has largely been unanswered except for a recent systematic review that favored the risk-need-responsivity (RNR) (behavioral management) model of supervision (Drake 2011).

A small body of literature has examined the impact of probation on per-person offending rates. MacKenzie and Li (2002) examined the rate of offending of probationers and found that during the period of supervision, their self-reported offending rates decreased slightly. They found that having more conditions of supervision or requirements did not impact offending rates or offending behavior. But there is caution that needs to be acknowledged given that this was a quasi-experimental design with no control group (no one was assigned to not being supervised by an authority of the state) or comparison group; instead the study examined pre-post self-reported behaviors of offending. MacKenzie and Li (2002) also raise questions about whether added supervision conditions are useful given that the additional conditions do not appear to have a deterrent effect.

Supervision studies have primarily focused on contact levels and caseload size. The premise is that the caseload size is used as a proxy for the

amount of time that the officer can devote to each offender. Two outstanding questions are: (1) what is the optimal size of the caseload a probation officer can manage to increase the success on probation? and (2) what impact does increasing the contact between the probation officer and the probationer have on contacts? The question about caseload size was addressed in several randomized trials to assess whether a caseload of 25–40 (depending on the study) had any impact on offending behavior. The theory was that having too many probationers to supervise would reduce the effectiveness of supervision by reducing the time that the offender can spend with the officer (Taxman 2002; MacKenzie 2006). Of course, these studies did not consider the difference when caseloads were 100 or more as compared to prior studies when caseloads were under 40 offenders per officer. Most of the caseload size findings from these studies (examining smaller caseloads under 40 offenders) were null, meaning that the caseload size did not affect offender outcomes. Since the concept of size of caseload was not associated with a particular theory of supervision, the studies did not contribute to a better understanding of what the probation officer should do as part of supervision.

Dosage studies (i.e., “frequency of contact”) were the next series of studies conducted to detect how much contact is needed to improve offender outcomes. This set of studies was built on similar theoretical deficits in that the studies did not examine different styles of supervision but instead examined how more contact between the officer and offender/probationer affected outcomes. Petersilia and Turner (1993), in the largest multisite randomized trial (13 sites for probation supervision and 2 for parole) in probation supervision, found that intensive supervision services (the amount of required contacts varied by site) served to increase technical violations (i.e., allowed officers to be aware of compliance issues) but had no impact on rearrests. Intensive supervision heightened the number of contacts between the officer and probationer, increased the use of drug testing to detect drug use, and increased conditions of release. Yet, it had no

notable impact on offending behaviors of offenders. The increased contact model has been found to be ineffective in reducing criminal behavior, although it is acknowledged that the law enforcement component has the potential to actually increase technical violations (Aos et al. 2006; MacKenzie 2006; Taxman 2002).

The caseload size and dosage studies on supervision have not found any impact on these factors on improvements in supervision outcomes. That is, the law enforcement and monitoring approach does not appear to improve outcomes, but this can only be stated with qualifications given that insufficient studies have examined or compared different types of supervision strategies. A recent systematic review by Drake (2011) found that the RNR model of supervision has the greatest impact on offending, followed by supervision with treatment conditions. Other forms of supervision such as contact only or contacts and drug testing (controls) had no impact on outcomes. The RNR model of supervision allows supervision to be more “client centered,” where the goal is to tailor probation conditions and style of supervision to the individual. This draws from the “what works” (evidence-based practices) literature, focusing on reducing the risk of the individual offending by attending to dynamic criminogenic needs through specific case plans and responsive treatment programs. A major component of the model – besides the hard technology of using standardized tools for screening, assessment, and placement in appropriate programming – is the emphasis on the “soft” technology of department or the relationship between officer and offender (Taxman 2002, 2008a; Taxman et al. 2004). The RNR model of supervision addresses the tension between enforcement and social work models of supervision by realigning the goals of supervision officers to be behavioral managers. The theoretical framework is that offender change is a function of attention to target, proximal behaviors that are crime reducing, and a trusting relationship between the offender and officer.

The RNR model draws upon the importance of probationers and officers having a working relationship to address the general factors that affect

involvement in criminal conduct. Recent studies illustrate how improved working relationships (e.g., empathy, trust, care, voice) have a positive relationship with offender outcomes (Taxman and Ainsworth 2009). Probationers (with mental health conditions) who perceived their officer to be tough had more failures and higher numbers of violations than those that did not (Skeem et al. 2007). Thanner and Taxman (2003, 2004) found that when offenders reported that they had a “voice” (i.e., the probation officer allowed the offender to participate in deciding the type of sanctions for failure to comply with requirements), reductions occurred in arrests and positive drug tests. While recognizing the importance of the person-centered model in supervision, James Bonta and colleagues in Canada studied whether probation officers have the appropriate interpersonal skills, role modeling, and communication skills to work effectively with offenders in an evidence-based practices model of risk, needs, and responsivity. The general findings from their studies are that probation officers do not have these skills and, even if the officers have the skills, they do not use them in supervision of offenders (Bonta et al. 2011).

Within the field, the following principles are considered important to an evidence-based supervision system (Taxman 2008b; Taxman et al. 2004; NIC 2004):

1. *Manage risk levels.* Providing higher-risk offenders with more structured control and treatment services, it is possible to reduce recidivism. Using risk level to articulate a supervision policy based on providing more intensive services by risk level serves to use probation resources wisely and use treatment services in a fashion that generates the best results. A related finding is that low-risk offenders could be supervised with fewer resources, and by providing low-risk offenders with minimal services, one can obtain relatively positive findings. In a recent experiment with low-risk offenders, Barnes and colleagues (2010) found that minimal supervision (average of 2.5 contacts per year) had similar recidivism results as offenders supervised on a more traditional schedule (average 4.5 contacts per year).
2. *Treat dynamic criminogenic needs* (i.e., substance abuse, impulsive behavior, criminal peers, and criminal thinking). Offenders vary considerably in the factors that affect their criminal behavior. While risk level indicates the likelihood of further involvement with the justice system, criminogenic needs identify the dynamic factors that affect involvement with criminal behavior. These dynamic factors can be altered with the use of proper treatment programming and correctional controls. The criminogenic needs should be targeted to improve outcomes.
3. *Manage compliance.* The most difficult part of any behavior change is sustaining the effect. Probation agencies can assist with compliance with judicial or parole board mandates. Compliance is similar to monitoring offenders, but the key is to use short-term goals to allow offenders to achieve positive outcomes; short-term goals are stacked towards longer-term outcomes of reduced drug use and alcohol abuse and continued involvement with the justice system. Retention strategies are important to achieve longer-term impacts. The use of administrative sanctions (matrix of responses to different types of behavior such as drug use, failure to pay fees, etc.) is recommended to provide graduated, structured responses.
4. *Create an environment for offender change.* An important part of the EBP model is the creation of an environment to support offender change. A focus only on revocations is counter to the emphasis on behavioral change, which is long and difficult. More attention is needed to creating an organizational culture that supports trusting relationship on supervision. The working relationship between the offender and the probation officer is an important component of the change process in that it builds support for change (Taxman and Ainsworth 2009).

This constitutes the behavioral management model of supervision where therapeutic strategies are used to facilitate offender change. The toolkit for supervision officers includes motivational enhancements, cognitive restructuring for meeting criminogenic needs and compliance

management, and targeted responses to behaviors; all of this must occur in an environment where behavioral change is expected to be slow and steady with some relapses. In fact, relapses are expected to be commonplace and provide the tools to build resiliency to further change.

### Maryland Proactive Community Supervision Study

A recent systematic review found that the evidence-based practices model that emphasizes behavioral management reduces recidivism by 16 %, in contrast to enforcement supervision (no impact) and supervision with treatment (10 % effect) (Drake 2011). The question is whether an evidence-based supervision model can be implemented and can deliver the same expected results of reduced recidivism as the “what works.” The Maryland Proactive Community Supervision (PCS) experiment was a test of this model (see Taxman 2008a). Taxman and colleagues (2004) translated the risk-need-responsivity (RNR) model into a model for probation supervision given that the original model of “what works” principles was primarily geared towards treatment-related programming. The core components of the probation supervision model were based on the following theoretical approaches that blend accountability with therapeutic interventions, as shown in Table 1. One key component is the role of the supervision officer in helping the offender facilitate behavioral change by using cognitive restructuring strategies into routine practices of risk and need assessment, case planning, and compliance monitoring. That is, officers were trained in using cognitive restructuring and motivational interviewing as part of how they address traditional offender processing procedures (e.g., assessment, case planning, treatment and control monitoring, and determination of progress). The PCS model was designed to address the tension between the law enforcement and social work frameworks, with the emphasis on using quality contacts as a conduit for offender change. The behavioral management components were designed to integrate cognitive restructuring and behavioral modification frameworks within supervision settings by having the officer use these techniques with offenders.

**Behavioral Management in Probation, Table 1** Components of the PCS model

Components of the PCS model	
	Theoretical framework
Risk and need assessment; Prioritize moderate- and high-risk offenders in treatment programs	Risk assessment Treatment matching (responsivity)
Case planning and typologies for major criminogenic needs (specifying needs)	Treatment matching (responsivity)
Offender input into case plans	Motivational enhancement; Cognitive restructuring
Department (working alliance between officer and offender)	Motivational enhancement
Compliance management including sanctions and rewards	Enforcement; Boundary setting; Behavioral modification
Cognitive restructuring for offenders	Cognitive behavioral interventions
Officers as role models	Motivational enhancement

The PCS offender supervision process model consists of five major components (see Taxman et al. 2004 for more details). A five-item risk screener was used to determine initial assignment. Offenders scoring moderate to high risk are then involved in a lengthier assessment process involving the Level of Service Inventory–Revised, a third-generation risk assessment tool (Andrews et al. 2006). Officers also conduct a thorough review of the person’s place of residence and social networks. As part of the process, the offender is asked about their desired goals during supervision. All of this information is used to assess the factors that affect criminal behavior, with attention to the specific typology of criminogenic behavior. The six typologies (and related goals) are disassociated (develop prosocial network), drug addiction (achieve abstinence and recovery), drug-involved entrepreneur (obtain prosocial employment), violent offender (address power and control issues), domestic violence (address relationship and control issues), mental health (continue treatment and address support network), and sexual deviance (achieve control over urges and manage behavior). The typology

helps define the components of the case plan, including the appropriate type of treatment programming and controls applied, such as drug testing, curfews, house arrest, or other types of mechanisms to limit liberties. On a monthly basis, the offender and the supervision officer review progress on the case plan (see Taxman 2008a). The case plan is revised monthly based on the offender's progress in meeting goals and the offender's attitude. Offenders are given no more than three goals a month, with participation in treatment services prioritized as one of the key goals.

The process hinges on the offender's engagement to achieve ownership of the case plan through a positive working relationship with the supervising officer. The agency achieves the emphasis on engagement through a series of skill development sessions that emphasize (1) learning to use motivational interviewing strategies, (2) using cognitive restructuring strategies to assist offenders in problem solving to address their criminogenic needs, and (3) using performance measurements (e.g., drug tests, attendance) to assess offenders' progress. The skill development efforts provide officers with the ability to adapt and translate motivational interviewing, behavioral modification, and cognitive restructuring in a community supervision environment (see Taxman et al. 2004) into traditional functions of assessment, case planning, monitoring, and compliance assessments. These skill-building components provide the officers with new behavioral strategies to work with offenders.

The PCS model of skill development and refocus of supervision could not be accomplished without changes in the culture of the probation officer. The agency created a social learning environment (for staff and probationers) with an emphasis on building a probation culture that supported officers' use of the behavioral management strategies instead of traditional law enforcement techniques. The agency adapted core tenets of a social learning environment: greet offenders with proper salutations, shake hands with the offender upon entrance and exit, and maintain eye contact with the offender during all personal conversations.

Additionally, the face-to-face contact of supervision is realigned. The traditional face-to-face contacts are altered to bilateral information exchange sessions where the goals of supervision could be assessed, refined, and restated. Assessment and other data collection exercises are shared with offenders to allow them to learn about their own behavior. Finally, performance measures for offenders, supervision staff, and PCS offices are used to reinforce the emphasis on behavioral management strategies such as number of offenders employed, number of goals achieved, and then attention to the accomplishments per typology. Officers and probationers reviewed the target goals in each section as part of the behavioral contract and these accomplishments are used to build future target goals. The emphasis on target goals is to gradually improve the probationers' success on probation. This is the process that defines the behavioral management framework used in a responsive face-to-face contact system.

In a place-based experimental design where four probation/parole offices in Maryland implemented the behavioral management supervision model (PCS) and four similar offices used the traditional law enforcement supervision style, logistic regression results found that, controlling for length of time on supervision and prior criminal history, offenders that were supervised in the behavioral management style were less likely to be rearrested (30 % for the PCS and 42 % of the non-PCS sample;  $p < 0.01$ ) and less likely to have a warrant issued for technical violations (34.7 % of the PCS group and 40 % for the non-PCS group;  $p < 0.10$ ). The study also included a process evaluation to assess the degree to which the key components of the model were implemented. The assessment inventory (LSI-R) was implemented in 70 % of the cases and the typologies were used in 56 % of the cases. The typologies were used as a vehicle to identify short-term goals to improve outcomes, and for those that were assigned typologies, a greater percentage were placed into appropriate programming and controls than in the control group. Some officers did not implement the model as planned which resulted in some cases with no typology assignment. In these cases,

fewer services were obtained for the probationer. Several replications of the application of the risk-need-responsivity model of supervision have confirmed reductions in recidivism (Drake 2011).

### **Further Work on Behavioral Management (RNR) Supervision Models**

Trying to disentangle the effective mechanisms of supervision is the subject of a growing body of research. The focus of attention has been on (1) specialized caseloads, (2) different collaboration between probation agencies and treatment providers, (3) the use of graduated sanctions to manage offender behavior, (4) “light” supervision for low-risk cases, and (5) improving the problem-solving skills of officers.

*Specialized Caseloads.* Very little research has been conducted on the impact of specialized caseloads, or the concentration of offenders with like criminogenic needs with one officer. The available research has been on offenders with mental health disorders or domestic violence. In a national survey of specialized caseloads, special mental health units were distinguished by (1) caseloads consisting of clients with mental disorders, (2) reduced caseload sizes, (3) trained officers in mental health issues and behavioral management problems, (4) integration of probation and community mental health resources, and (5) use of problem-solving strategies to address treatment noncompliance. Three separate evaluations of specialized caseloads for probationers with mental illness have found a tendency towards positive outcomes of reduced technical violations or rearrests, although these studies are not conclusive given their weak research designs and measures (Epperson 2009). Specialized units for domestic violence caseload have shown similar results to intensive supervision programs with increased contacts that have led to increased violations. The emphasis of most domestic violence research focused on enforcement and control of offenders, which has the same outcomes of other intensive supervision studies – that is, the specialized caseloads led to greater probation violations.

*Collaboration Models Between Probation and Treatment Providers.* Most community correctional

agencies in the USA do not provide treatment services directly by the probation agency. Instead, the offender is referred to treatment programs provided by publically funded treatment programs or the probation agency contracts for services in the community. Increasing the access to treatment services has been a long-standing challenge for probation and community corrections agencies in that the services are seldom designed specifically for an offender population. The specialized case management services, commonly referred to as Treatment Accountability for Safer Communities (TASC), are designed to provide a bridge between justice and treatment agencies. The five-site evaluation of the TASC case management model found that case management did not result in reduced recidivism or technical violations and did not improve access to treatment services. In the sites where positive findings occurred, the service agency also provided treatment services and therefore directly improved access to treatment (Anglin et al. 1999). This is a common theme regarding case management; agencies that provide both case management and treatment are more likely to improve outcomes.

In contrast to a brokerage model of service linkage, Taxman (1998) developed the concept of a policy-driven seamless system of care. The concept was built upon information sharing across the spectrum of service delivery: assessment, drug testing, treatment access and participation, supervision requirements, and outcomes. The goal was to have probation officers and treatment providers jointly share information that would be useful in their efforts to assist offenders. The study results vary considerably, mainly based on the features of the seamless system that are present. For pretrial supervision focusing on testing, treatment, and sanctions, a randomized trial found reductions in rearrest rates for higher-risk offenders (Harrell et al. 1998). In another study of probation that used a person-centered model of probation supervision, the findings are also mixed. An assessor in the probation office would screen for substance abuse disorders and then target offenders to appropriate treatment. Treatment should be 9 months in duration with two levels of care (generally a step



down to outpatient but it could be from in-jail treatment to outpatient care, drug testing, and sanctions). The probation/parole officer's role was as a resource broker, working with the treatment counselor on treatment access, monitoring compliance with drug treatment requirements, and responding to positive drug test results. The study resulted in increased access to treatment services and increased days in treatment, but the seamless intervention was more costly to deliver and did not result in reduced recidivism for some higher-risk offenders (Alemi et al. 2006; Taxman and Thanner 2006). For higher-risk offenders, there was a reduction in arrests and opiate drug use (Thanner and Taxman 2003; Taxman and Thanner 2006). A more recent study used a slightly different seamless framework but added a manualized cognitive behavioral therapy treatment sessions offered in the probation office. Again, there were increases in treatment access, and the study found improvements in outcomes for moderate-risk offenders, but not for high-risk offenders (Taxman and Belenko, 2011). The provision of treatment in the probation office did not universally improve outcomes for offenders, but the study found that certain treatments are more effective for some offenders. Overall, the study found that offenders with drug dependence disorders tended to have less positive outcomes than those with abuse disorders. It appears that the outpatient treatment is not as effective for those with dependence disorders.

Another study focused on probation/parole officer and treatment provider working together in a collaborative model of care. The Step 'n Out study, conducted in six sites, required the officer and treatment provider to work together on a collaborative behavioral management (CBM) process of assessing treatment needs, reviewing treatment progress, and using a structured reward schedule to incentivize offenders for positive behavior (Friedmann et al. 2008). CBM is modeled after contingency management, which focuses on providing rewards for positive behaviors (see Stitzer et al. 2011). The study found a treatment effect for offenders with substance use disorders, particularly those that did not use hard-core drugs (e.g., opiates, cocaine, methamphetamine)

(Friedmann et al. 2012). In this model, the probation officer and treatment provider have frequent meetings to review the progress of offenders.

*Use of Graduated Responses.* Supervision officers have tremendous discretion regarding the handling (and managing) of offender outcomes. As drug treatment courts and the seamless system evolved, the emphasis was on using gradual responses to offender noncompliance, commonly referred to as graduated sanctions. The notion is that sanctions need to be swift, certain, and severe (increasing in intensity based on the number and type of violation behavior). Sanctions can be delivered by probation or parole officers, or they can be delivered by judicial or parole board authorities. The former is referred to as administrative sanctions and the latter as sanctions. Swiftens means that the sanction occurs in a period of time close to the noncompliant event. Certainty means that the sanction is delivered as it was indicated. Severity refers to the type of response and whether it involves liberty restrictions such as incarceration. Paternoster (1987), in a study of perceptual deterrence, found that swiftens and certainty are more likely to influence offending behavior. While there has been general support for probation and parole officers using administrative sanctions (a set regulatory procedure) or a matrix of noncompliant behavior and type of responses, there are relatively few empirical studies of the degree to which administrative sanctions reduce offending behaviors. In a non-experimental study examining the use of graduated sanctions on parolees during the first year after release from prison, researchers found that graduated sanctions could alter the offending behaviors of offenders. The use of graduated sanctions in a manner that features swift, certain, and severe can enhance the suppression effect of parole on criminal behavior. Steiner et al. (2012) did not examine the use of any specific sanction schedule and used the sanction mechanism as a proximity for severity of response (i.e., supervising officer gives a privilege restriction, parole board or a hearing officer, placement in a halfway house, and formal revocation hearing where it was possible the offender may have been returned to prison). They found that sanctions were

effective regardless of offender risk level, but younger offenders did not respond as well to sanctions.

Another graduated response is the use of rewards. Following the model of contingency management in the substance abuse treatment literature, rewards are to be delivered swiftly, certainly, and severely (progressively increasing in value). Rewards tested in drug treatment programs demonstrate that offenders respond well, with rewards impacting drug use and treatment retention. Marlowe and colleagues (2009) found that rewards were very successful for young offenders in a drug court setting in terms of reducing offending behavior. Rudes and colleagues (2011) outlined how rewards could be adapted in justice-type settings and used as part of a progressive behavioral management scheme. Rewards create an environment for probation that is consistent with the efforts to facilitate offender change. That is, recognizing that offenders respond to acknowledgment about positive steps during probation facilitates positive outcomes.

*Low-Risk Offenders.* The risk-need-responsivity model focuses attention on moderate-to high-risk offenders. The triage model indicates that low-risk offenders should not have the same oversight or monitoring as other offenders, presuming that their criminogenic needs are minimal (similar to their low criminal justice risk status). This principle is based on the lower recidivism rates of low-risk offenders. Barnes and colleagues (2012) conducted an experiment where low-risk offenders were supervised on administrative caseloads (caseloads averaging 400 offenders per officer with requirements of two in-person contacts and two phone contacts a year) or traditional supervision (monthly in-person contacts). The study found that offenders assigned to traditional supervision are more likely to abscond from probation (partially a function of the traditional supervision defining absconding as missing for 2 months of contacts, whereas the experimental group had to not have contact in 3 months). There were no statistically significant differences in the rearrest rates or drug test positive rates. In examining the comparative effectiveness of the two models for supervising low-risk offenders, the experiment confirms that

there is a slight advantage in reducing contact levels in that there are fewer absconders. Similar to intensive supervision, which finds that increased attention is likely to denote more compliance-related issues, this study found that low-risk offenders can be managed with less supervision. These findings are important for policy considerations in that risk level is an important consideration for managing offenders in the community.

*Skill building of Officers.* The behavioral management approach to supervision has yielded attention to an important part of the equation to achieve more positive offender outcomes: the skills of the officers supervising offenders. Officer skills are important because the model, as described above, relies upon officers to create an environment where change can occur, to engage offenders in the change processes, to use cognitive restructuring techniques in working with offenders, and to use problem solving and other strategies to address compliance-related issues. The notion that officers need to be trained on the basic premises of the behavioral management principles (including RNR) was evident in the MD PCS study (cited above), which recognized that preservice training and ongoing in-service training did not include the basic principles of managing risks and attending to criminogenic needs. The MD PCS project designed and built three training programs: Officer Engagement skills (based on principles of motivational enhancement and interviewing), “Sizing Up” (based on applying the risk and need assessment tools), and in-office refresher training (see Taxman et al. 2004). More recent attention has been given to enhancing the training of officers through similar curriculums that focus on structuring sessions, relationship-building skills, behavioral techniques, cognitive techniques, and effective correctional skills (Bonta et al. 2011; Robinson et al. 2011). The premise is that in order for officers to use the RNR principles, their work flow needs to be adapted to the principles of their work environment, including attention to intake and assessment, monitoring compliance, monitoring treatment compliance, and reinforcing cognitive restructuring.

Without training in applying the RNR principles, it is unlikely that officers will discuss

procriminal attitudes or cognitions with offenders and even more unlikely to use cognitive intervention techniques with their clients. Bourgon et al. (2011) found that the Canadian STICS training, which included review tapes, improved officers' discussion about procriminal attitudes and results in increased utilization of cognitive techniques (namely, helping the offender to examine their own behavior and outline options). In a cox regression model, the authors also found that the use of cognitive techniques reduced offending rates. Bonta and colleagues (2011) had similar findings when most probation officer-offender contacts focused on probation conditions and noncriminogenic factors (e.g., work, sports). The increased training improved the focus on procriminal attitudes among the experimental group with more attention to attitudes and employment and educational issues. Offenders supervised by officers using the skills were also significantly less likely to reoffend.

## Conclusion

The behavioral management model of supervision is currently being implemented in the USA as well as other countries. The recent systematic review confirmed that the RNR supervision model had better outcomes than other supervision approaches (Drake 2011). However, probation officers are not aware of how the risk-need-responsivity (RNR) principles apply to supervision, and therefore, the successful implementation of this model will depend on the technology transfer strategies that are used. The "what works" model (RNR) has primarily been targeted to treatment programs, but as learned in the MD PCS demonstration, it is possible for supervision officers to use the RNR principles. The challenge is to adapt RNR to align with supervision. RNR relies upon principles of behavioral management in terms of recognizing that there are boundaries that need to be in place (enforcement) but also that therapeutic techniques of individualized care, cognitive restructuring, and graduated response are useful to achieve improvements in supervision outcomes. The advent of various training protocols (i.e., STICS

in Canada, STARRS in federal probation, EPICS in other supervision models) illustrates the complexity of the transfer process and the need to import RNR principles into supervision practices. The proliferation of these curricula illustrates that there is a need to improve the skill sets of officers to use the RNR principles, especially given that few officers are trained in social work or counseling skills. This becomes the challenge to implementation in that supervision staff need to develop new skills to work with offenders in a different manner.

The other challenge is the development of policies to support the use of behavioral management strategies. An important part of the model is to use the risk level to allocate resource levels so that moderate- and high-risk offenders receive ongoing (and more intensive) care than low-risk offenders. While this is an intuitive policy, it is actually more challenging to implement since officers tend to find lower-risk offenders easier to supervise (e.g., they tend to be less resistant). But other policies that are important to put in place have to do with collaborations with treatment providers and using graduated responses. The collaboration with treatment providers is an important policy issue. The working relationship between supervision and treatment agencies should be defined at the office level to ensure that treatment providers use evidence-based treatments and that information is shared between the two disciplines. The creation of policy-level agreements will avoid probation officers having different agreements with treatment providers and having different expectations from the treatment providers. The use of graduated responses – both negative and positive – is another policy issue in that the agency needs to determine what can be used as reinforcers both in terms of liberty restrictions (sanctions) and liberty enhancers (rewards).

This discussion of behavioral management supervision has not included another dimension that is being integrated into the workspace of supervision: temporally and spatially based supervision. The increasing awareness that some offenders are concentrated in certain neighborhoods has spurred an interest in community-based probation models that focus on ameliorating the risks of the individual and the place. These models are based on the

premise that concentration of offenders into typically resource-deprived communities only serves to undermine supervision; the demands of the community override the requirements of supervision. Byrne (2009) also points out that targeting supervision at high-risk times – generally referring to the early part of the supervision period or the first 90 days – is a sound strategy for reducing recidivism. During this early period, offenders are more likely to fail (MacKenzie and Li 2002; MacKenzie and Brame 2001), and officers have an opportunity to set expectations about the behavior of offenders under supervision. The early period of supervision is when offenders are going to test the conditions of release. Little research has been conducted on different methods for improving compliance during this early period of supervision, but it is an important factor.

Behavioral management offers a solution to the age-old debate about supervision being enforcement vs. social work. Since the behavioral management (RNR) model incorporates a balance between compliance-focused supervision and working on offender change issues, it offers a model of supervision that fulfills the multiple goals of sentencing. Moreover, behavioral management helps assist officers in learning strategies to facilitate offender change. The test over time will be whether behavioral management supervision can be successfully implemented and what the scaled-up version will have an impact on offenders' outcomes.

## Related Entries

- ▶ [Community Courts](#)
- ▶ [Effective Supervision Principles for Probation and Parole](#)
- ▶ [Probation and Parole Practices](#)

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## Behavioral Science Evidence in Criminal Trials

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### Overview

Expert witnesses are by no means always scientists, but they must know something the judge or jury do not. The judge will decide whether or not that is the case. For the behavioral sciences, this approach tends to favor the clinical end of the spectrum; even there, however, lawyers have been known to be skeptical of the value of such evidence in a criminal trial. Such reservations are often founded on ignorance of the culture, purpose, and circumstances that form the background against which experts make behavioral assessments. Courts should be aware of the requirements of diagnoses for clinical purposes. The length of observation period normally necessary for diagnostic purposes is unlikely to be available in the context of preparation for trial. A relatively short period of contact possibly makes it easier for a mental illness to be faked. In any event, a retrospective analysis of how an observed condition would have affected past events inevitably involves much speculation.

Behavioral sciences such as psychology, sociology, or anthropology do not fit comfortably

within conventional perceptions of expert scientific evidence. There is, within these disciplines, extensive disagreement about questions of central importance, such as methodology. This makes it more difficult to persuade judges that witnesses specializing in these areas of scholarship have an expert opinion of evidential value. Even more problematically, to some extent behavioral sciences represent a challenge to the power of a tribunal of fact, whether judge, juror, or magistrate, to determine the ultimate issue, the matter to be determined in reaching a verdict. Frequently the central or ultimate issue in a criminal trial requires a determination of how an individual, often the defendant or victim, responded to a particular situation. This decision by the trier of fact tends to be based to some extent on intuitive or heuristic judgments about human behavior. Many lawyers would defend such decision-making as an essential element in the role of the lay jury as the representative of popular sentiment, bringing community moral and practical judgments into the criminal court. This role, and the way in which it has traditionally been performed, insofar as it consists of assessments of human reactions and motivations, occupies the very area of expertise claimed by behavioral science. Unlike “hard science,” therefore, where courts defer to specialist knowledge, behavioral science is seen as trespassing on the fundamentals of the jury’s responsibility and rationale. Lay finders of fact and behavioral experts are effectively pitted in competition against each other in terms of their ability to understand and evaluate human nature.

### **Admissibility of Behavioral Science Evidence**

Where a potential witness can contribute expertise indubitably outside the experience of the tribunal of fact, such as a psychiatrist or clinical psychologist in relation to the defenses of diminished responsibility or insanity, the expert may, even in jurisdictions which prohibit expert opinion on the ultimate issue, give evidence as to the presence or absence and nature of the condition in question

and whether it satisfies legal requirements. In most cases, however, behavioral science evidence occupies a problematic middle ground between acknowledged scientific expertise, such as clinical diagnosis, and the kind of “common sense” or everyday perceptions and generalizations of human behavior that are considered properly to be the province of the jury. Given that, essentially, the common law approach to the admissibility of expert opinion evidence is one of *laissez-faire* insofar as the question is left to the trial judge in the particular proceedings (Roberts and Zuckerman 2010, pp. 482–493), the admissibility of behavioral science evidence is determined on a case-by-case basis. However, courts are jealously protective of the role of the finder of fact as the arbiter of everyday life. In the Court of Appeal of England and Wales, Lord Justice Lawton famously observed:

The fact that an expert witness has impressive scientific qualifications does not by that fact alone make his opinion on matters of human nature and behaviour within the limits of normality any more helpful than that of the jurors themselves; but there is a danger that they may think that it does....Jurors do not need psychiatrists to tell them how ordinary folk who are not suffering from any mental illness are likely to react to the stresses and strains of life. (*R v Turner* [1975] 1 All ER 70, 74)

A concern to protect the role of the jury in interpreting events and applying their own standards of reasonableness may prompt courts to distinguish “normal” behavior, preempting expert opinion evidence, from “abnormal” mental states. This sharp distinction is a legal invention. In psychiatry, the difference is a matter of degree rather than kind, and as medical knowledge advances, the blurry line between them shifts over time. “Medical expertise lies along a line between the predictive technological know-how of the physical science and the loose generalizations of social science practice” (Smith 1985, p. 69). Nevertheless, legal jurisdictions may develop their own typologies of mental states indicating which will be deemed pathological or normal as far as the law of that jurisdiction is concerned. This will determine whether the jury require expert help to decide what the effect of the disorder might have been. And, while

psychological research on memory in “normal” adults would be generally excluded from evidence, child development will usually be regarded as an established scientific discipline upon which a specialist could assist the court. Explaining developmental aspects of children’s memories and how a particular child compares with the norm does not usurp the function of the jury, as long as the expert does not say that a particular child is telling the truth; that would be for the court to decide.

As “gate-keepers” determining whether or not particular expert evidence is admissible in a given case, judges arbitrate between areas of psychology in which it is possible to draw on specialist expertise over and above the everyday experiences of lay jurors. Obscure or recently identified conditions are more likely than familiar ones to be regarded with hostility. The judge has to accept both that the claimed expertise exists as a discipline and that the particular witness is sufficiently acquainted with it. A second aspect of the “gate-keeper” role is the possibility that the judge will exercise some kind of reliability standard in deciding whether or not the opinion evidence should be admitted. In England and Wales, however, there has been concern that a “culture of acceptance” of purportedly scientific evidence could be creating miscarriages of justice. A generous approach is likely to be founded on the belief that cross-examination by opponents is an effective tool to unmask any bogus science or scientist. True, the anxiety in England and Wales about “junk science” expressed in recent case law, the academic literature, and a significant official report (Law Commission 2011) has arisen in the context of “hard,” nonbehavioral scientific evidence on such matters as the reliability of “earprint” evidence (*R v Dallagher* [2002] EWCA Crim 1903), or shaken baby syndrome (*R v Harris* [2006] 1 Cr App R 5, [2005] EWCA Crim 1980). However, the Law Commission’s recommendations for an explicit reliability standard to regulate the admission of all expert opinion evidence in criminal proceedings would, if implemented, apply to “soft” science, too. This approach has caused problems in the United States, where judicial

attempts to evolve a workable reliability test have been accused of favoring dated theories and militating against the admission of reliable and pertinent behavioral science evidence.

## Defining Reliability Standards

An influential reliability test, deriving from *Frye v US*, 293 F 1013 (DC Cir 1923), is that the discipline commands “general acceptability to the scientific community.” A general acceptance criterion could be thought to discriminate against any developing science, and is likely to exclude any discipline where there is substantial controversy among practitioners. An Australian test, inquiring “whether the subject matter of the [expert’s] opinion forms part of a body of knowledge or experience which is sufficiently organized or recognized to be accepted as a reliable body of knowledge or experience” (*R v Bonython* (1984) 38 SASR 45) is along similar lines. The alternative American test, advocated by *Daubert v Merrell Dow Pharmaceuticals*, 113 S Ct 2786 (1993), aims to enable the courts to be more responsive to scientific innovation, while at the same time demanding that sufficient reliability is demonstrated. Trial judges are enjoined by *Daubert* to consider factors such as whether the technique in question has been subjected to peer review, whether it has been generally accepted, and whether the theory or technique can be or has been tested. Another factor that may be considered is the falsifiability of the opinion, which means that its plausibility depends upon whether the theory or concept on which it rests is capable of being shown to be false. Any proposition incapable of being verified in this way should, on the *Daubert* test, be treated with great suspicion by the courts.

The difficulty for the social and behavioral sciences, economics, sociology, and psychology, is that they do not fit easily into this portrait of a body of knowledge consisting of a set of propositions which have been demonstrated to hold in all circumstances. The English Law Commission proposes a new test for reliability which would force judges to decide whether or not the

purported science is soundly based. Trial judges should consider a number of factors in making this judgment, the most significant for behavioral science being: whether or not any relevant hypothesis has been sufficiently scrutinized, the nature of the data on which the opinion is based, where the expert's opinion relies on the results of any measurement or survey, and whether the opinion takes proper account of matters such as the degree of precision or margin of uncertainty in data collection (Law Commission 2011).

### Reliability Standards and Behavioral Science Evidence

Evidence given by experts in behavioral or social sciences is not easily accommodated within a *Daubert*-style test for admissibility. Falsifiability is not an appropriate technique in the social sciences. Controlled experiments are virtually impossible: "we correctly refuse to abuse a child for the sake of research" (Graham 1998). Aware of such practical and ethical constraints, many American judges have, sidestepped *Daubert* on the grounds that the test does not apply to "soft" science. They have proceeded to admit evidence of false confessions and suggestible personalities, post-traumatic stress disorder (PTSD), and repressed memory syndrome (Slovenko 1998). Meanwhile, Canadian courts have allowed expert evidence on "learned helplessness" to be adduced to dispel any jury myths about battered women (see *R v Lavallee* (1990) 55 CCC (3d) 97).

The reception of "syndrome evidence" has not met with universal approval. For instance, controversy surrounds the reception in rape trials of evidence of rape trauma syndrome. This is offered to demonstrate that the complainant's behavior is consistent with her allegation that she was raped. Critics suggest that the alleged syndrome is based on inconclusive research and could consequently cause great prejudice to the defendant. It has not been established whether rape trauma syndrome is a subset of post-traumatic stress disorder. It lacks specificity, in that many kinds of behavior appear to fall within its compass; the victim may be afraid to be

indoors, or she may be afraid to go out of doors, depending on where the rape took place. Notwithstanding considerable skepticism, evidence of rape trauma syndrome has been admitted in some courts in the United States. Some American judges, however, allow it only as rebuttal evidence after the defense has argued that the complainant's behavior indicates fabrication. Given the adverse effect on the fact finder where a rape complainant displays no emotion, expert evidence to preempt the complainant's superficial serenity from being misconstrued may be advisable (Frazier and Borgida 1992). It appears, however, that expert evidence on general aspects of rape trauma syndrome has less impact on a jury than expert testimony linking rape trauma syndrome to specific features of the case (Brekke and Borgida 1988).

It has been argued that courts are being bombarded with an escalating number of novel afflictions, such as "urban survival syndrome," which could be derided as "trash syndromes." Over-willingness to accept syndrome evidence could lead to miscarriages of justice (Mosteller 1996). Repressed memory syndrome has been a particular target for criticism; it has been said that according to the falsifiability criterion, claims for repressed memory are not based on valid science. Yet there are psychiatric disorders, such as multiple personality disorder and attention-deficit hyperactivity disorder, listed in professional diagnostic manuals and commanding respect as legitimate medicine, which could equally be said to lack scientific validation (Richardson et al. 1995). One of the problems here is that techniques and theory developed for one purpose are being considered for use in a very different context. Conditions such as child sexual abuse accommodation syndrome or theories of repressed memory, developed originally for therapeutic purposes and therefore characteristically evaluated within their scientific communities in terms of alleviation of symptoms, are being scrutinized by judges for a level of objectively established reliability never sought or claimed for them. Courts which understand this, and mindful of the presumed ability of cross-examination to expose any overstated claim,



tend to allow such evidence on the basis that *Daubert* permits a flexible approach and does not require general acceptance in the scientific community. To apply the *Daubert* test strictly would deprive fact finders of relevant bodies of knowledge. Yet to abandon any admissibility threshold or critical screening process in relation to expert evidence on behavioral issues would expose courts to the risk that plausible “junk science” would warp decision-making in criminal proceedings.

One might attempt to distinguish evidence presented as scientific knowledge, requiring compliance with *Daubert*, from specialist knowledge based on experience. The “experiential” category would include, for example, lip-reading expertise (*R v Luttrell* [2004] 2 Cr App R 31, CA), knowledge of black market drug prices (*R v Hodges* [2003] 2 Cr App R 247, CA), and handwriting comparisons. In cases involving testimony regarding battered woman syndrome, the evidence would have the beneficial effect of countering potential jury prejudice, but would not be masquerading as proven science. This is, effectively, the pragmatic strategy of many American courts (Renaker 1996). But if “junk science” is to be excluded, judges are left searching for a true test of genuine experience and knowledge. American and British judges appear to have found no alternative, where “soft science” is concerned, to reliance on their own intuitive assessment of the alleged field of expertise. Thus, while an American court may allow evidence of “psychological autopsies,” retrospectively assessing the alleged murder victim’s state of mind and tendency to suicide on the basis of medical records and interviews with family and friends (*State v Huber*, 62 Ohio Misc.2d 237), English courts remain unpersuaded: *R v Gilfoyle* [2001] 2 Cr App R 57, CA.

The work of criminal profilers, although heavily featured in film and television drama and, arguably, of use during police investigation, seems to be another area on which judicial opinion is divided – as is the expert community itself. From an objective point of view, psychological profiling seems to be an area of behavioral science far too undeveloped for use in a criminal

trial. Profiling does not enjoy universal support among the ranks of psychologists, some of whom regard it as little more than a professional sideline with dubious scientific credentials (Gudjonsson and Copson 2000). It is likely that decision-makers who became aware of earlier criminal or other discreditable behavior by an accused person will be readier to convict (Tanford and Penrod 1984; Wagenaar et al. 1993), and so such evidence is particularly problematic when offered as an indicator of guilt as part of the prosecution case (Roberts and Zuckerman 2010, Chap. 14). Conversely, defense profile evidence was excluded from a rape trial on the ground that there was no proof that rapists have particular mental characteristics, or that psychiatrists could, by examination of a person, determine the presence or absence of these supposed characteristics: *State v Cavallo*, 88 NJ 508; 443 A (2d) 1020, (1982).

### **Behavioral Science Having Significant Legal Effect**

The most well-known area in which the findings of behavioral scientists have influenced criminal trials concerns eyewitness evidence. Where identification is a contested issue in a trial, the ability of an eyewitness to link the accused person to the offense is a potentially invaluable asset to the prosecution. Direct observation by an individual of the perpetrator committing the offense is just about the best evidence that can be presented to the court. The true value of such evidence is, however, in considerable doubt following the findings of psychological experiments testing eyewitness reliability. According to these experimental simulations, accuracy of description varies between 65 % and 75 %, and decreases somewhat over time (Shepherd et al. 1982). Given that most developed legal systems demand prior identification in the relatively clinical conditions furnished by an identification parade before the witness can identify the defendant in court, the more significant data relate to the accuracy of recognition. Here, little reassurance can be offered to criminal lawyers. Although

recognizing someone is easier than describing them, the accuracy of recognition is also alarmingly low. Across the multiplicity of studies, it varies between 35 % and 60 %. Although practical difficulties affecting the observation, such as lack of light or a short-lived event affording only a fleeting glimpse, exacerbate the problem, good observation conditions and prolonged observation periods make little difference to overall accuracy. High levels of error in recognition remain.

Identification parades provide only limited safeguards against wrongful identifications. If a parade is held at which the real actor is not present, there is a one-third likelihood of the eyewitness selecting a volunteer (Pigott et al. 1990). It appears that the eyewitness, anxious to choose *someone*, will select the line-up member who, compared with the other members of the line-up, most resembles the culprit (Wells 1993). If there is a familiar face in the line-up, it may be confused for that of the offender, the witness forgetting the context of a previous acquaintance. This is known as the “transference effect.” Similar mistakes can be made where the person the witness saw resembled someone familiar, such as a well-known TV personality. There are extra layers of unreliability in identifications across races (Shepherd et al. 1974) and, more debatably, across genders and age groups (Jalbert and Getting 1992). In 1984, a black man was convicted of rape in the United States on the basis of an identification by the white female victim, who picked him out from a line-up. In 1995, DNA evidence established that another man had carried out the attack (Memon and McDaid 2000). The witness had been confident of the accuracy of her recognition throughout. Research indicates that eyewitness confidence is no guarantor of accuracy (Deffenbacher and Loftus 1982). The forensic impact of such confidence may be profound, however. Jurors’ common sense presuppositions support the existence of a significant link between witness confidence and accuracy (Wells et al. 2002), and so an eyewitness who insists on the reliability of their memory may exert a very powerful influence on the outcome of the trial.

One way for the problem of eyewitness inaccuracy to be accommodated in a trial setting is to allow an expert witness to explain to the jury that identification evidence may be considerably less reliable than it appears, and to draw attention to any factors in the particular case that would cast doubt on the accuracy of the recognition in question. Uninstructed, jurors seem to be impressed by identification evidence, particularly if there is more than one witness. Judicial warnings apparently do little to moderate juror enthusiasm for eyewitness evidence (Cutler and Penrod 1995), so courts in some US states have attempted to amplify its effect by allowing expert testimony to explain the unreliability of identifications. Whether greater judicial attention should be devoted to the voluminous psychological literature on the accuracy of identification turns partly upon the extent to which it is possible to extrapolate directly from laboratory findings to real-life situations. In one naturalistic study, eyewitnesses interviewed following an armed robbery and fatal shooting in the street achieved strikingly high rates of accuracy. In follow-up interviews, accuracy did not decrease, but new information, also accurate, was offered. The recall of those who suffered the most stress was not adversely affected by their trauma (Yuille and Cutshall 1986). In any event, it would be unwise to dismiss all eyewitness evidence as equally unreliable. Certain individuals may have a good track record for recognition (Cutler and Penrod 1995). It is possibly misleading to claim that eyewitness confidence is no indicator of accuracy whatsoever, since the issue may be more complicated than some research literature allows. Eyewitnesses may legitimately feel confident about the accuracy of some of the details they recall while being less confident about others (Stephenson 1984). Also, there is a significant difference between a confident delivery and actually believing that one’s identification is undoubtedly correct (King 1986). However, most of the relevant research focuses on subjects’ beliefs in the correctness of their identifications rather than upon the personality or demeanor of particular eyewitnesses.

Another vital evidential issue illuminated by behavioral science research concerns the probative

value of admissions made by suspects under criminal investigation. Admissions of guilt are regarded as key items of evidence for the prosecution, but have come under critical scrutiny from researchers. The result is increasing recognition of the extent to which the readiness to confess to a crime may be influenced not only by improper pressure from police officers, but by personality traits peculiar to the individual which may cause him or her to make false admissions. This may occur without any impropriety on the part of investigators. The vulnerability of some suspects, such as those with low or borderline IQ, may be clear to courts and can be taken into account when considering the reliability of their admissions. In some cases, however, factors indicating that a confession should be viewed with caution are less obvious. This does not necessarily mean that courts will routinely accept expert evidence on the reliability of a confession. They tend to be most receptive to such evidence where the defendant has a personality disorder or learning difficulties, that is, at the more overtly scientific end of behavioral science typically involving clinical diagnosis. Yet even in a nonclinical case, there may be powerful personality factors indicating that the suspect's confession should be treated with skepticism.

The psychological characteristics which need to be addressed are interrogative *suggestibility* and *compliance*, which are traits that may cause false admissions to be made once in police custody, even during perfectly proper and legitimate questioning by police officers. Suggestibility is a tendency to accept uncritically information communicated during questions. It is most pronounced in people of low intelligence. Gudjonsson (1992) has devised what he considers to be a reliable scale to assess suggestibility as a continuing condition, while allowing suggestibility may be aggravated by circumstances. Gudjonsson defines compliance as a tendency to go along with requests made by a person perceived to be in authority, even though the subject does not necessarily agree with or wholeheartedly endorse them. Building on these foundational concepts, Gudjonsson (1992) advanced a useful threefold classification of false confessions.

First, "voluntary" confessions are not induced by the police in any way; often there is no interview. The confession may constitute a response to publicity for a serious offense. Certain individuals are well known to their local police station for attempting to take responsibility for a whole series of crimes reported in the media. This kind of behavior may be motivated by a desire for notoriety, or to relieve a general feeling of guilt, or reflect an inability to distinguish fact and fantasy. A second kind of unreliable confession is the "coerced-compliant," a false confession motivated by the desire to escape from a highly stressful situation, such as police custody. The immediate gain, frequently nothing more than the need for short-term resolution and predictability of future events, becomes a more powerful influence on the subject's behavior than the more uncertain long-term effects of the confession, even if the allegation concerns a serious offense. The majority of false confessions encountered in practice are coerced-compliant. Wagenaar concurs that common occasions for false confessions include the suspect taking an apparently easy way out, not anticipating the long-term consequences, perhaps thinking it will be possible to retract later, or choosing the only conceivable way out because the suspect is unable to cope with immediate pressures, for example, of confinement and interrogation, or a situation where the suspect is simply outwitted by the questioner – a not inconceivable event in the inevitably oppressive atmosphere of police custody (Wagenaar et al. 1993). A third category of false confession is the "coerced-internalized." People who do not trust their own memory may begin to accept the suggestions of apparently authoritative and knowledgeable individuals, like police investigators. Such suspects may become temporarily persuaded that they might have, or did indeed, commit the crime. Such a confession is more likely to be elicited by gentle, rather than aggressive, interviewing. It may be retracted later on, although the subject is more likely to stick to internalized admissions than is the coerced-compliant confessor who never truly accepted responsibility in the first place. Even if a confession is later withdrawn, the subject's memory

may be permanently distorted (Wagenaar et al. 1993) and the confession itself might still be admissible in court.

Some legal jurisdictions recognize the risks involved in attributing significant evidential weight to confession evidence even in the absence of illegitimate pressure from the investigating authorities. Elsewhere, the psychology of false confessions is simply not recognized (see, e.g., Hodgson 2000's depictions of French criminal process). In Scotland and the Netherlands, no one can be convicted on the strength of a confession alone. In some US jurisdictions, a police station confession by the defendant, without corroboration, is not considered sufficient to sustain a conviction. In jurisdictions without a general corroboration requirement, there may be particular protections for vulnerable suspects, as in England and Wales, but they tend to allow weak corroboration, such as the suspect's "special knowledge" of circumstantial details that only the perpetrator of the crime would know, to support the admissibility of the confession. However, the notion that the suspect's guilt is reliably confirmed by his awareness of facts not communicated to the public is a dubious method of corroborating confessions. There are documented instances of suspects who confess in apparent knowledge of such information, only later to be proved innocent in the light of further revelations. They must have become aware of the relevant facts at some point during the period of detention, possibly through careless "confabulation" whereby police interviewers unwittingly feed information to the suspect (Kassin and Wrightsman 1988).

In prosecutions of domestic violence, theories of learned helplessness in consequence of domestic abuse have been influential in developing defenses or partial defenses, for example, in murder cases where prolonged exposure to domestic abuse has apparently caused the victim to respond by killing the abuser. Colloquially known as "battered woman syndrome," this psychological disorder is said to establish a causal relationship between the pattern of abuse suffered by the defendant, her psychological reactions to it, and her perception of her subsequent conduct. There is some evidence that lay persons, and

therefore potential jurors, tend to consider that victims of domestic violence should leave home to escape it. This rationalist interpretation of behavior appears to be a powerful influence on jury reasoning, relatively impervious to expert evidence explaining why the obvious escape route is not employed in many such cases (Dodge and Green 1991). It is difficult to communicate to nonspecialists that prolonged experience of a highly controlled situation and exposure to violent sanctions for disobedience can reduce to vanishing point a person's subjective free choice. A battered partner might have genuinely (and sometimes even reasonably) believed that deadly force was the only way to escape from a perilous situation in which his or her own life was in mortal danger (Ewing 1987).

## Future Directions

Behavioral science research and expertise have influenced many aspects of criminal investigation and the way evidence is presented to the court. Psychological autopsies and offender profiling have assisted the police in some cases. Sociological and psychological research has established that the emphasis on orality of testimony has had a markedly detrimental effect on a whole range of witnesses who have in the past struggled with the performance elements of the adversarial trial. In many jurisdictions, the evidence of vulnerable witnesses is now facilitated by technological innovations such as "live link" videoconferencing or videorecording (see, e.g., Roberts and Zuckerman 2010, Chap. 10). Criminal courts owe much to researchers in these fields. In addition, some aspects of behavioral science research are gaining ground in terms of providing evidence that may assist in reaching a verdict. Greater use of expert evidence in rape cases, in particular to dispel commonly held assumptions about the likely effect of having been raped upon a person's demeanor and likely response, could be very useful.

However, behavioral science is not yet ready to assist the court with the most problematic and the most crucial of the judgments that the jury has to make, namely, whether someone is speaking

the truth or telling lies. Experts are not allowed to testify as to the credibility of a particular witness, although they may be able to explain the effect of a mental disorder on sufferers in general. At the same time, the literature on what, if any, exhibited behaviors constitute evidence of lying is at best inconclusive (Vrij 2000). Some years ago naïve faith in technological development encouraged flirtations with truth drugs and lie detector machines, but experience has since shown that they are not reliable indicators of dishonesty. Simple devices measuring levels of moisture on the palms of the hands may indicate nervousness, and nothing more (Saxe 1991). Polygraphs are used in criminal investigations in Canada, Israel, and Japan, but nowhere more than in the United States; albeit that courts in some US states will still not accept polygraph evidence (Patrick and Iacono 1991). In the United Kingdom, a working group produced such a devastating report on polygraph machines that the Government of the day abandoned any attempt to introduce them as a source of evidence in criminal trials (Working Group of the British Psychological Society on the Use of Polygraphs 1986).

The only conclusions to be drawn from the voluminous psychological literature on lying, credibility, and demeanor is that, first, neither laymen nor machines are accurate in recognizing liars or lies. Secondly, there is no valid scientific reason to believe that there is any observable indicator of lying behavior that an expert could use to identify it on behalf of fact finders in criminal adjudication. If the consequence of successful cross-examination in court is to produce behaviors commonly associated with lying but equally consistent with nervousness or confusion, the only inferential conclusions are negative. Behavioral science research certainly casts doubt on various familiar categories of evidence and challenges many commonly held lay assumptions capable of frustrating the courts' truth-seeking function. Unfortunately, however, it cannot provide much in the way of positive information as to where the truth of the case lies. The credibility of a witness, or the weight to attach to their evidence, lies in the two issues of reliability, depending on memory, and truthfulness. Behavioral science can tell us only of

generalities, not specifics. Were it otherwise, jury dominance over the ultimate issue could be challenged. Unless and until our understanding of human conduct and thinking develops into a demonstrably convincing and coherent scientific discipline affording positive, case-specific guidance to fact finders, jurors (and victims and defendants) will be left at the mercy of their "common-sense" perceptions of behavior – prejudices, stereotypes, myths, and all.

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## Bias Crime

- [Hate Crime](#)

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## Bias in Forensic Science

- [Cognitive Forensics: Human Cognition, Contextual Information, and Bias](#)

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## Bias/Hate Motivated Crime

- [Hate Crime](#)

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## Biased Policing

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## Synonyms

[Differential enforcement](#); [Police or officer discretionary decision-making](#); [Racial profiling](#); [Selective enforcement](#)

## Overview

This entry will address the issues associated with police racial and ethnic bias, including research findings, research limitations, and policy issues related to reducing racial and ethnic disparities.

## Introduction

Why are racial and ethnic minority citizens overrepresented at every stage of the criminal justice system? Answers to this reality are not clear or straightforward. While all criminal justice actors enjoy a degree of discretion in their decision-making, it is particularly important to determine whether bias is present in the early

stages of the criminal justice process because initial biases can cause reverberations throughout the entire criminal justice process. The differential treatment patterns and practices of police in their decision-making have historically manifested itself in several ways (e.g., sexism, ageism) and garnered widespread attention. More specifically, a well of skepticism exists among citizens, scholars, legislatures, and the judiciary in response to the overrepresentation of racial and ethnic minorities at every stage of the criminal justice process. In response to the appearance of racial and ethnic animus in police decision-making, voluntary, legislative, and judicial data explorations of racial and ethnic biases in police discretionary decision-making have been encouraged.

The following manuscript addresses several issues associated with racial and ethnic bias among police. First, decision-making is contextualized as it relates to bias among policing discretion. Second, the difficulties of measuring bias-based policing are discussed within the context of future research endeavors. Third, research findings across various police decision-making points, including the use of force, the decision to arrest, and automobile stops, are presented. Fourth, commentary on contemporary manifestations of bias-based policing is set against a post-9/11 America. Fifth, bias-based policing results are tempered by some of the acknowledged limitations of prior research. Finally, a policy framework for reducing racial and ethnic disparities among officer discretionary decision-making is advanced.

### Discretionary Decision-Making

Discretionary decision-making has been defined as “informal decision-making or [a] judgment by professionals based on unwritten rules, their training and their experience” (Samaha 2005, p. 10). Discretionary decision-making stands in opposition to mandatory acts, such as obeying the law and following departmental policies. Davis (1969) contextualized the relationship between law and discretion as “where law ends, discretion begins” (p. 3). Although this absolute dichotomy is false (see Walker 1993), law and discretion are

related to the concept of procedural justice. Procedural justice refers to processes of fairness (Sunshine and Tyler 2003). Police discretionary decision-making is perceived to be fair when it is based on facts. Rarely is the legitimacy of fair outcomes called into question. Alternatively, discretionary decision-making is problematic when the judgments of police are seen as unfair, not based on law, and/or based on personal biases. This led Walker (1993) to conclude that “[t]he problem is not discretion itself, but its misuse” (p. 4). More specifically to the topic at hand, bias-based policing or the selective/differential enforcement patterns and practices of police on minorities have the appearance of abuse.

Contrary to folklore, research indicates police receive overwhelming support from the public, and this support has been stable over time (Tuch and Weitzer 1997). There is, however, some variability in police support across races and ethnicities. These differences are most pronounced in African American and Hispanic communities (Withrow 2006). African Americans and Hispanics consistently report higher rates of dissatisfaction with police when compared with Whites (Ramirez et al. 2000). Although explaining the satisfaction gap between racial and ethnic groups is beyond the scope of this entry, one source for the disparity may be police differential treatment of minorities during encounters. Minorities believe police are more punitive during their encounters with police (Lundman and Kaufman 2003; Eith and Durose 2011). Beckett and Sasson (2004) noted that perceptions of being singled out impact attitudes of procedural justice and may explain “African Americans’ growing alienation from the institutions of criminal justice” (p. 126).

When looking at the prevalence of actual police-citizen encounters, a disconnect between perceptual and actual disparities becomes apparent. The Bureau of Justice Statistics (BJS) has collected and reported on the racial and ethnic composition of police-citizen encounters every triennial since 1999. In the most recent report titled *Contacts between Police and the Public*, Eith and Durose (2011) estimated that 16.9 % of the population, 16 or older, will have some sort of face-to-face interaction with police (p. 1).

Among the 40.0 million citizens who encountered the police through citizen- and police-initiated contacts, 14.2 % were African American and 15.2 % were Hispanic (Eith and Durose 2011, p. 5). These statistics nearly mirror the proportion of racial and ethnic minorities in the general population.

Taken together, it appears as though the quality of interactions between police and racial and ethnic minorities may be the driving force behind differences in support. There are two observations on this issue. First, isolated instances of police misconduct usually have a bigger social impact than expected. For example, media sensationalism surrounding incidents like Rodney King, Abner Louima, and Amadou Diallo has the potential to generalize individual incidents of police misconduct to all law enforcement officials. Despite the isolated nature of events, racially and ethnically motivated events are, to a certain degree, vicariously experienced by all minorities. Second, bias-based policing may be more pronounced than these statistics indicate because contextual nuances are rarely expressed in national surveys. This is explored further in the following section (Walker and Meyers 2000).

### Contextualizing Bias-Based Policing

Despite evidence of racial and ethnic neutrality among police, identifying race- and/or ethnicity-based police patterns and practices is a much more difficult task (Eith and Durose 2011). First, race and/or ethnicity are rarely absolute influencers of police behavior. Rather, bias typically manifests itself in other more subtle ways. The importance of race and/or ethnicity varies on a spectrum in which race and/or ethnicity is more or less influential among other exogenous factors (Higgins et al. 2008). Relevant factors have typically been found to fall within the following typologies: environmental, organizational, officer, and situational. Environmental factors suggest that the physical location in which the police-citizen encounter occurs has bearing on police decision-making. Organizational factors

prescribe that departmental norms, culture, and structure differentially impact police decision-making. Officer factors charge that the characteristics of the officer, such as the age, race, ethnicity, experience, training, and rank of the officer, may influence decision-making. Situational factors, including citizen demographics and the reason(s) for police interaction, are also said to have pull in police decision-making. Finally, it is important to note that race and/or ethnicity may interact with each of these factors. Research found that minorities were significantly more likely to be arrested than nonminorities (Smith et al. 1984). The impact, however, vanished when the suspects' demeanor was taken into consideration and concluded that while race and/or ethnicity is influential, it does not have a direct impact on police decision-making. Similarly, other research found that police use significantly more force during encounters with minorities, yet the relationship between race and the use of force dissipated after controlling for neighborhood disadvantage and crime rates (Terrill and Reisig 2003). These examples highlight the complex nature of identifying bias within police decision-making.

The use of race and/or ethnicity may also be motivated by legally accepted practices (Schafer et al. 2006). These practices include drug courier profiles and "race out of place" policing. Drug courier profiling is a set of characteristics, including the race and/or ethnicity of the citizen, thought to be typical among persons carrying illegal drugs. Although highly subjective, police may stop, question, and under some situations search citizens fitting the drug courier profile. In choosing to engage citizens, race and/or ethnicity may be one of many factors contributing to police decision-making. Alternatively, "race out of place" policing indicates that race and/or ethnicity is the sole determining factor for police engagement with citizens. "Race out of place" policing refers to the legal practice of police engaging citizens based on a perceived inconsistency between the racial and/or ethnic identity of the citizen and the racial and/or ethnic composition of the ecological or neighborhood context (Ramirez et al. 2000). Each of these instances demonstrates the importance of distinguishing



legal and extralegal factors when identifying race- and/or ethnicity-based policing patterns and practices. Given the contextual uniqueness of bias-based policing, the influence of race and/or ethnicity cannot be considered within a vacuum. Rather, many nuanced factors can be said to be important in police decision-making.

### **Measuring Bias-Based Policing Through Discretionary Decision-Making**

Measuring police discretionary decision-making has been a difficult task because racial and ethnic animus is likely to be concealed within police behaviors that have low visibility. Since there is a great deal of difficulty in observing low-visibility police behaviors, the bulk of bias-based policing research has focused on systematic difference in decision-making outcomes. Furthermore, a host of discretionary decision-making outcomes with a variety of analytical approaches have been studied. The three most prominently featured discretionary decision-making points among bias-based policing focus on the use of force, the decision to arrest, and automobile stops. Each of these decision-making points provides measurable aspects to the cognitive processes of police discretionary decision-making.

The capacity to use coercive force is one of the defining features of police work. Racial and ethnic minorities consistently report the use of force against them is excessive. Among the people who contacted the police, only 1.4 % had force threatened or used against them (Eith and Durose 2011). Among threats and the use of force statistics, the most frequently cited type was being “pushed” or “grabbed” (53.5 %) (Eith and Durose 2011, p. 13). Although the threat and use of force is uncommon, African Americans and Hispanics are overrepresented among these instances. In fact, African Americans were more than twice (3.4 %) as likely to have force threatened or used against them than the national average (Eith and Durose 2011, p. 12). African Americans are also overrepresented among deadly force statistics.

Although consequences for the use of force are more immediate to citizens, the consequences of “arrests have a far more pervasive effect on peoples’ lives” (Walker 1993, p. 39). An arrest occurs when a person is taken into custody for the purpose of criminal prosecution or interrogation. The evidentiary threshold for determining the appropriateness of an arrest is probable cause. Unfortunately for citizens, probable cause does not provide safeguards against arrest harassment or police failure to make an arrest. Further complicating the issue is the unreliability of arrest data because the point at which an individual is arrested is hard to identify and highly influenced by departmental norms. Some jurisdictions report arrests when citizens are formally restrained. Other jurisdictions, however, report arrests when citizens are formally booked. The difference between each reporting threshold represents a “dark figure” of arrests in which bias-based policing may be concealed (Erez 1984). Despite sporadic arrest reporting, official arrest statistics indicate that African Americans are overrepresented. Tillman (1987) estimated that nearly two-thirds (65.5 %) of African American males and one-third of African American females (29.6 %) will be arrested before the age of 30. This rate is nearly two times the rate of White males (33.9 %) and three times the rate of White females (10.1 %) arrested before the age of 30. While there is some indication that race and ethnicity may be an indirect cause for the decision to arrest, the equitable application of the probable cause standard appears to be a myth.

The final discretionary decision-making point measures automobile stop outcomes. Racial profiling, a phenomenon also known as “driving while Black/Brown,” has gained parlance in American vernacular to represent the bias-based treatment patterns and practices of police on minorities during automobile stops (Alpert et al. 2007). Automobile stops present three unique opportunities for measuring the discretionary decision-making of police: stop initiation, searches, and the punitiveness of automobile stop outcomes. Research on automobile stop initiation focuses on the racial and/or ethnic composition of drivers stopped by the police. The bulk of drivers are

stopped by the police for traffic enforcement-related issues, but more discretionary stops, such as investigatory stops, are also often captured. Among the citizens that encountered the police during automobile stops, 8.4 % were White, 8.8 % were African American, and 9.1 % were Hispanic (Eith and Durose 2011, p. 7). The relative parity of these statistics does not demonstrate the full dynamics of police-citizen automobile stops. Additionally, some researchers indicate that stop initiation poorly represents instances of bias-based policing because police officers can “only determine the race of the driver prior to the stop approximately 30 % of the time” (Alpert et al. 2007, p. 48). In response to these issues, researchers (Fallik and Novak 2012) have suggested that post-stop decision-making provides better indications of the presence of bias.

The second measured outcome from automobile stops concerns the officers’ decision to search the driver, vehicle, passenger(s), or a combination of some or all three entities. African American drivers (12.3 %) were approximately three times more likely to be searched than white drivers (3.9 %) and approximately two times more likely to be searched than Hispanic drivers (5.8 %) (Eith and Durose 2011, p. 10). Despite being searched at a greater rate than Whites, minorities are no more likely to possess illegal contraband (Engel and Calnon 2004; Lundman 2004). Predicting searches becomes even more complicated when race and ethnicity are considered among other exogenous factors. Some researchers have concluded that race and/or ethnicity was one of numerous search predictors (Williams and Stahl 2008). Alternatively, while race remained a consequential predictor for Smith and Petrocelli (2001), Whites were nearly two and half times more likely to be the subject of consent searches. Consent searches are the most discretionary type of search legally permissible. Others found that the influence of race and/or ethnicity is neutralized once search types or typologies are specified (Fallik and Novak 2012; Schafer et al. 2006). There are eight search types permissible by Supreme Court precedent and police procedures: (1) searches incident to arrest, (2) inventory searches after a vehicle has been

impounded, (3) searches based on the presence of an existing search warrant, (4) probable cause searches, (5) searches where contraband was discovered in plain view, (6) searches following a drug-sniffing dog alert, (7) “Terry” stop or pat-down searches, and (8) searches subsequent to the driver or passenger(s) given consent. When identifying typologies, each of the search types is typically categorized by the level of discretion required to execute the search, such as highly discretionary or non-discretionary. Finally, some researchers have discovered that race and/or ethnicity is not a significant predictor of searches (Higgins et al. 2008).

Similar nuanced inconsistencies can be said to exist for automobile stop punitiveness. Some research indicates that African Americans are more likely to be treated harshly by police sanctions (Engel and Calnon 2004). Alternatively, a more contextual awareness of less punitive outcomes among police-citizen encounters in that African Americans and Hispanics were less likely to receive punitive sanctions from the police but were more likely to be stopped for highly discretionary reasons, such as equipment violations and failure to signal (Novak 2004). This suggests that police may be using minor traffic violations as a pretextual motive for engaging minority drivers in automobile stops. An additional measure for an automobile stops’ punitiveness considers how long citizens are detained. This body of research lacks consistency in the nature, strength, and sometimes presence of bias-based policing (Withrow 2006).

### **Contemporary Examples of Bias-Based Policing**

Although most bias-based policing research has primarily focused on African Americans, other racial and ethnic groups have also been the targets of bias-based policing patterns and practices. Arab Americans, persons of Middle Eastern decent, and Muslims became the targets of bias-based policing. After September 11, over 12,000 Arab Americans, persons of Middle Eastern decent, and Muslims were “detained and held indefinitely” on suspicion

of terrorism (Nguyen 2005, p. XVII). Furthermore, public opinions for the use of racial and ethnic profiling changed due to the fear society felt toward terrorist and terrorism. Prior to September 11, national opinion polls generally reported opposition to the use of race and/or ethnicity in policing, but after September 11, the majority of society supported the targeting of Arab Americans, persons of Middle Eastern descent, and Muslims in airports (Nguyen 2005) leading one scholar to explain, “after 9/11 the rules changed and everything we had learned about the social costs and ineffectiveness of racial profiling was largely ignored” (Withrow 2006, p. 244).

In response to terrorism threats at home, the US Justice Department began pressuring local and state authorities to enforce and enact immigration laws. Hispanics were particularly victimized by these efforts because of the loose US-Mexican border. Post September 11, political leaders “framed the border as a critical front in the war on terror” (Nguyen 2005, p. 92). For example, Arizona enacted the “Support Our Law Enforcement and Safe Neighborhoods” Act – also known as Senate Bill 1070 – which was designed to discourage illegal immigration in the United States. The bill required that police, during the course of lawful citizen contact, determine the immigration status of the people they encounter when there is reasonable suspicion to believe that the individual is an illegal alien, encouraging police to target Hispanic populations. Although the law never took effect, due to a federal injunction and a Supreme Court decision in 2012, it remains uncertain what the future will hold on this issue.

## Research Limitations

Despite researchers’ best efforts to explain the etiology of bias-based policing, two methodological controversies have arisen from this body of literature that are important to consider when drawing conclusions regarding the breadth and depth of bias in policing activities. First, there is some concern for officer self-reports measures of bias-based policing. Concern stems from the fact

that officers may be aware of how their accounts of situations are being used and they may fear that accurately reporting some or all of their encounters with citizens may reflect poorly on them or the department. In automobile stops, research indicated that this may result in officers “ghosting’ their data or recording race and ethnicity incorrectly to create the illusion of equitable stop and search procedures” (Williams and Stahl 2008, p. 231). This type of reactivity or Hawthorne effect greatly threatens the external validity of results. Alternatively, others found few signs of officer disengagement in his time-series analyses of encounters once it was announced that data collection would begin (Novak 2004). Given these inconsistencies, researchers should measure officer reactivity when using self-report data.

Second, measuring bias-based policing patterns and practices requires that benchmarks for performance be set. Benchmarks enable researchers to determine if police behavior matches expected decision-making outcomes. Deciding on an appropriate benchmark can be problematic with illusive and transitory populations. Related to automobile stops, “given a group of citizens stopped by the police (the numerator), what could be used as a denominator to conclusively determine whether certain drivers were stopped at a disproportionate rate?” (Schafer et al. 2006, p. 187). Over time, a variety of benchmarks have evolved, including census or modified census population estimates, information from drivers’ licenses, not-at-fault accident data, blind enforcement data, systematic social observations of violator populations (e.g., “rolling surveys”), and internal comparisons. Despite the ecological fallacies found in all of these benchmarks, coverage error – from the benchmark to the expected outcome – is more pronounced under certain research contexts. Bias-based researchers should select the benchmark that minimizes coverage error within the research context while recognizing that all benchmarks have their own limitations.

To address both of these issues, future research must tie theoretical rationales to understandings of police discretionary decision-making by using multiple data sources, ideally coming

from a triangulation of sources, including “police-reported, citizen-reported, and observer-reported data” (Lundman 2004, p. 343). Single source data explorations are often riddled with invalidity, inconclusiveness, and, worst of all, biases. A triangulation of data sources has the best potential to address each of these methodological issues. Efforts should be coupled with research that examines equitable and lawful policing that results in compliance by citizens (Piquero 2009). The etiology of police discretionary decision-making is best achieved from these methods.

## Policy Implications

The improper use of race and/or ethnicity places the legitimacy of all law enforcement agencies in jeopardy, but efforts to curb the abuse of discretion must weigh individual rights against crime control objectives. To control the use of discretionary decision-making, several evidence-based practices have been proposed and implemented (Davis 1969; Gottfredson and Gottfredson 1988; Walker 1993). Four typologies have emerged among these strategies: structure, confinement, checking, and options.

Structural policies are rules, regulations, and guidelines that identify appropriate behaviors. An example of a structural policy geared toward bias-based policing is mandatory reporting. Mandatory reporting policies require that officers document every encounter they have with citizens. Although some mandatory reporting initiatives have been court ordered, many of these policies are agency initiated. By documenting the nature of encounters, departments have developed early intervention systems (EIS) to address issues of bias-based policing (Walker and Katz 2008). EIS is a tool used to identifying individual officers who disparately engage racial and ethnic minorities. These officers are more commonly known as “bad apples.” The use of EIS has been encouraged by the shift toward electronic record keeping.

Confinement policies are rules, regulations, and guidelines that limit police behaviors. Examples of confinement are easily found in Supreme

Court decisions. For example, the Supreme Court in *Whren v. United States* ruled that an officers’ initial decision to engage citizens during automobile stops has to exceed the reasonable suspicion threshold. This ruling attempted to limit officer racial and ethnic pretextual motivations for stopping citizens. Although *Whren* may have encouraged police to hide behind minor traffic infractions when using race and/or ethnicity inappropriately during automobile stops, it confined police-initiated contacts to the reasonable suspicion standard.

Checking refers to the review of discretionary decision-making which can occur before, during, or after a decision is made. In order to be effective, the person or entity doing the checking must have a direct influence on the decision-making process. An example of a checking policy initiative used to combat bias-based policing is community review boards (CRBs). CRBs vary in the nature of the citizen input, review substance, breadth of the jurisdictional issues addressed, organizational structure, and operating policies. Functionally, CRBs provide external accountability to police-community-related issues. Police departments with CRBs have improved community-police relations, and cities with CRBs have higher rates of reporting. Both of these research findings indicate that communities with CRBs have greater confidence in police and the justice process. In essence, CRBs increase the visibility of citizen-reported police misconduct by providing an external review of instances in which an officers’ discretionary decision-making may have gone awry (Walker 2001).

Perhaps the most radical policy suggestion presented in the research literature is the abolition of discretionary. While abolition has typically been focused on court discretionary decision-making, few supporters of abolition contest that police discretionary decision-making should remain unaffected. However, many researchers feel as though abolition is “unrealistic and ill-advised” (Gottfredson and Gottfredson 1988, p. 51). One of the extra option policy initiatives jurisdictions are moving toward would include issuing summons to appear in court, tickets, or fines for possession of person use marijuana.

Since drug crimes disproportionately affect minorities, the extra option – other than arrest – reduces the racial and ethnic disproportionality among arrest statistics (Johnson et al. 2008). Providing extra options may not address bias-based policing directly, but it has the ability to shift the disproportionality of discretionary decision-making to less punitive outcomes, thereby reducing the prevalence of more punitive outcomes. Furthermore, it allows researchers to more easily identify instances of bias in more punitive response outcomes.

Finally, although the ability to use coercive force may be the sine qua non of policing, extralegal police aggression – also known as police brutality – is not without safeguards (Holmes and Smith 2008). Each of the aforementioned strategies for reducing discretionary decision-making (i.e., structure, confinement, checking, and options) can be found in recent use of force policy responses. First, police training began incorporating the use of force continuum into their curriculum. The use of force continuum is a structural tool that teaches officers proper responses to escalating threats of violence. Second, the Supreme Court rulings in *Tennessee v. Garner* (1985) confined the use of deadly force to instances where a reasonable person would have acted on the threat of death or serious physical injury posed by a suspect. The check on the use of force occurs after the fact. When an officer discharges their weapon, departments often require that the officer explain the circumstances that precipitated the discharge of their weapon in a formal report. Supervisors review these reports before determining if it was a “good” or “bad” shot. Finally, police departments nationally began issuing and training officers in the use of nonlethal weapons, such as pepper spray, Tasers, and rubber bullets. Additional options allow police to apply the appropriate amount of force to the level of escalation each situation requires. While each of these typologies uniquely addresses discretionary decision-making, when combined they have reduced the racial and ethnic disparity of persons killed by police (Sherman and Cohn 1986).

## Summary

Bias-based policing conjures up raw emotions. It is a complex social question rooted deeply within the historical and structural conditions of America. Acknowledging the existence of bias-based policing potentially compromises the legitimacy of the police in a democratic society. Ignoring or minimizing bias-based policing does not provide relief to targeted populations and does not hold individuals or organizations accountable. Research on the extent and impact of bias-based policing yields inconsistent conclusions. Furthermore, the impact of policies designed to address bias-based policing is difficult to determine. Given the current state of bias-based policing, the most productive conciliatory path is to join others in calling for further examination into the extent to which race and/or ethnicity impacts discretionary decision-making.

## Related Entries

- ▶ [Control of Police Misconduct](#)
- ▶ [Democratic Policing](#)
- ▶ [Law of Police Seizures and the Exercise of Discretion](#)
- ▶ [Law of Police Use of Force](#)
- ▶ [Legal Control of the Police](#)
- ▶ [Race and the Likelihood of Arrest](#)

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## Bicycle Theft

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### Overview

Bicycle theft is defined as the unauthorized removal of a nonmotorized pedal cycle. This usually refers to the theft of an entire bicycle but can also include theft of component parts and accessories such as lights, seats, and wheels. Bicycle theft can take many forms, reflecting the range of motivations of bicycle thieves. Some cycles are stolen for transportation purposes, others to joyride or to trade in for cash or drugs; *specific types* of bicycle may be stolen to order; a cycle may be stolen to facilitate another crime – an example of a *crime multiplier*; or a bike may be stolen in response to an offender’s bicycle being taken, thus comprising part of a *crime chain*. Awareness of the heterogeneity of cycle theft is important; different forms of cycle theft

are likely to demand different preventive responses.

Several studies suggest that bicycle theft is a common problem. However, compared to other high-volume property crimes, bicycle theft has been the subject of limited academic research, whether in criminology or related fields such as transport and urban planning. This is often attributed to the incompleteness of relevant police-recorded crime data where reporting rates and detection rates are both low. Failures to report may be explained by victim expectations that the chances of either detection or recovery of the bicycle are slim. Most lacking is reliable evaluations of what works to reduce cycle theft.

The spiraling obesity rates experienced in many industrialized regions in recent years (OECD 2011) have, among other things, prompted government agencies to promote cycling as a healthier alternative to motorized transport. Opportunity theories of crime would predict that increases in the population of cyclists will be associated with increases in the opportunities for cycle theft. This is a concern given that research suggests that bicycle ownership (a proxy for opportunities), measured at the country level, is strongly correlated with national levels of cycle theft. Moreover, the risk of cycle theft, real or perceived, is found to be a significant barrier to cycling (Rietveld and Koetse 2003). Cycle theft hence threatens to jeopardize strategies to better integrate cycling as a sustainable, health-promoting form of transport. Enriching our knowledge of cycle theft and determining effective ways to reduce it are therefore of social as well as academic importance.

This entry sets out what we know about cycle theft and the progress made in reducing it. It begins by describing the extent of cycle theft internationally and articulates challenges associated with measuring it. Next, some of the harms caused by cycle theft are outlined, particularly theft as a potential barrier to cycling uptake. Third, the major known correlates of cycle theft victimization are addressed. This is followed by a discussion of efforts to prevent cycle theft, and we conclude by outlining as yet unanswered research questions.

## The Extent of Bicycle Theft

Several studies suggest that bicycle theft is a common problem and that levels are highest in countries where cycling is popular. For example, using data from the International Crime Victim Survey (ICVS) and the European Survey on Crime and Safety (EU ICS), Van Dijk et al. (2007) report that bicycle ownership levels are strongly correlated ( $r = 0.76$ ,  $n = 30$ ,  $p < 0.05$ ) with national levels of bicycle theft. They find that the risks of cycle theft are considerably higher in Northern Europe, where cycling is widespread, than in North America and Australia where cycling is less prevalent. To illustrate, the 1-year victimization prevalence rates for 2003/2004 in Holland were 6.6 per 100 population, whereas in Australia, the figure was only 1.2. Despite this variation, across countries cyclists were consistently found to be around three times more likely to have their bike stolen than car owners their car or motorcyclists their motorbike (Van Dijk et al. 2007).

In the USA, the ICVS indicates that levels of cycle theft remained stable between 1998 and 2004, with a mean rate of 2.8 victims per 100 population. In terms of official crime statistics, the FBI classifies bicycle theft as an example of “larceny-theft,” alongside offenses such as shoplifting and pocket-picking. In 2009, bicycle theft constituted 3.4 % of all incidents of larceny, equating to over 200,000 offenses. This likely underestimates the true extent of the problem as many thefts fail to reach the police because of underreporting. Data from the ICVS, for example, suggest that roughly half of all bicycle thefts are reported to the police (Van Kesteren et al. 2000). The US National Crime Victimization Survey showed a fivefold difference between cycle thefts that are reported to the police and those that actually occurred in 2008.

A similar picture is observed in England and Wales. Police-recorded crime data indicate only minor yearly fluctuations in the levels of cycle theft since 1997, with around 100,000 thefts recorded in 2010/2011. This contrasts sharply with estimates from the British Crime Survey (BCS) which suggest that over the same year,

around 526,000 incidents occurred. Moreover, while recorded crime figures depict cycle theft as largely static over the past decade, for the same interval of time, estimates from the BCS suggest an upward trend both in the volume of cycle theft and rates per 10,000 bicycle-owning households. The true figures are probably higher still given the BCS excludes those aged under 16 from the survey sampling frame. Furthermore, viewed against a backdrop of general reductions in property crimes (for both data sources) in England and Wales since 2002/2003 (and elsewhere in the world), the increase in bicycle theft relative to changes in other types of acquisitive crime is more dramatic than the absolute change.

Explanations for the “dark figure” of cycle theft are varied. Interviews with cycle theft victims (Bryan-Brown and Saville 1997) reveal that many fail to notify the police because they believe they are unlikely to apprehend offenders or recover stolen cycles. Insofar as available data can be used to examine this, this notion appears to be justified. For example, police detection rates for bicycle theft are consistently low. In Sweden, where cycle theft is common, only 1 % of cycle thefts result in an arrest (Bra 2008). In England and Wales, sanction detection rates in 2008/2009 were marginally better at 5 % (Walker et al. 2009) but still low compared to other types of offenses. Poor police detection rates may partly be explained by the fact that for many bike thefts, there is little relationship between the offender and the victim, and thus identification of suspects is difficult. Another factor is the proof-of-ownership problem. Many cyclists cannot provide adequate proof that they own their bicycle. A study conducted by the London Metropolitan Police Service found that of the 836 cyclists surveyed, over three quarters did not know their cycle frame registration number (see Halliwell and Brown 2011). This frustrates reunification efforts because should stolen cycles be recovered by the police, there is often insufficient evidence to pursue the case and detained offenders will often be released without charge. Even when offenses are reported, Gamman et al. (2004) argue that many fail to be processed further because bicycle theft is considered a low police

priority. A similar observation is made in China where Zhang et al. (2007) claim that the police tend to limit their attention to repeat bicycle thieves.

### **The Harms of Cycle Crime: Theft as a Barrier to Cycling**

In many urban settings, current levels of obesity as well as road congestion and traffic-related air and noise pollution are generally considered to be excessive. Various initiatives have been proposed to reduce automobile dependency and encourage the use of bicycles. These include changes to infrastructure (such as the creation of cycling lanes), better integrating cycling with other forms of public transport (such as increasing cycle parking facilities at transport nodes), and increasing the provision of cycles (such as bike-sharing schemes). At this time the results appear mixed. While cycling remains relatively rare in many industrialized nations (compared to motorized transport), other countries have seen encouraging increases involving a small fraction but quite large numbers of individuals. Cycling in London, for example, has increased by 91 % since 2000 (TFL 2008). Similar trends, albeit less dramatic, have also been observed in several European cities (Oja and Vuori 2000) and in parts of the USA (Xing et al. 2008).

Commentators argue that cycle theft poses a threat to attempts to increase cycling rates – one that presently has received inadequate attention (see Sidebottom et al. 2009). Research finds that theft, and the fear of cycle theft, is a barrier to cycle use. Experience of theft can deter individuals from cycling due to an inability to replace the stolen bike or due to (justified) apathy that it may happen again. This is supported by interviews with cycle theft victims that find a sizable portion of cyclists do not replace their bicycle once stolen and/or cycle less frequently (Davies et al. 1998; Mercat and Heran 2003). Direct or vicarious experience of theft may also increase the likelihood of cyclists’ purchasing cheap, low-quality cycles and associated protective measures (such as locks) due to an assumption that theft is an



inevitable “occupational hazard.” Tentative support for this comes from a study by Mercat and Heran (2003) in which half of all cycle theft victims who purchased a replacement bike opted for a second-hand rather than a new cycle.

Reducing cycle theft may also yield wider social benefits. A review of numerous programs to increase physical activity internationally reports strong evidence that as the number of cyclists and pedestrians increases, the frequency of collisions between those groups and motorists *decreases* (Jacobson 2003). The putative mechanism underlying this pattern is that motorists modify their driving behavior when they expect or encounter cyclists and walkers. To slightly overstate the point, effectively reducing the risks of cycle theft may indirectly contribute to improvements in the safety of cyclists.

### The Bicycle as Crime Target

Bicycles are attractive targets for theft. They fit Clarke’s (1999) CRAVED model which outlines the attributes commonly associated with frequently stolen items. Johnson et al. (2008) suggest that bicycles are:

- Concealable** – Widespread availability of cycles in many urban settings enables cycle thieves to remain inconspicuous when riding away on a stolen bicycle, rendering the crime concealable.
- Removable** – If poorly locked, bicycles are easy to remove. With respect to theft *from* cycles, quick-release features (such as wheels or seat posts) that are inadequately secured also require little effort to steal.
- Available** – More bikes provide more opportunities for cycle theft, as well as a greater demand for bicycles and component parts.
- Valuable** – While many bicycles are available cheaply, others can cost in advance of \$3,000 dollars, thereby constituting a desirable crime target. There is also often an imbalance between the value of the bike and the value of the security measures used to protect it.
- Enjoyable** – Bicycles offer utility as a form of transport, particularly in regions where public transport is inadequate and/or expensive.

From an offender’s perspective, a stolen cycle can also facilitate further crimes through increasing the speed and area in which they can forage for crime targets.

**Disposable** – Thieves can easily sell stolen bikes, either “whole” or “piecemeal.” Abundant buyer’s markets for stolen bikes, swelled by the internet, may also provide an incentive to steal.

### Correlates of Victimization

Research has identified several factors that are reliably associated with the risk of cycle theft. Consistent with the national trends described above, opportunity plays a central role. Cycle theft is found to concentrate at locations where opportunities are plentiful. Common examples include in and around the victim’s home, at university campuses, or at transport hubs. Estimates from the BCS suggest that over half of all reported cycle thefts in England and Wales occur immediately outside the victim’s home (i.e., bikes stored in sheds or gardens), thereby constituting the most common location for cycle theft. University campuses often house a large proportion of high-performance and expensive bicycles that attract bicycle thieves. A study by Lovejoy and Handy (2011) at the University of California, Davis, shows that 19 % of sampled cyclists report experiencing cycle theft on campus during their tenure, with 9 % suffering a theft in the previous year. A regular supply of opportunities in the form of parked bicycles also explains why railway stations are common locations for theft. Data from the British Transport Police, who are responsible for policing the railway system of England, Wales, and Scotland, show that recorded cases of theft and damage to bicycles increased by 74 % between 2002/2003 (3,277 offenses) and 2006/2007 (5,686 offenses) and have remained at comparatively high levels since (in 2010/2011 there were 5,859 offenses). Other forms of vehicle theft and criminal damage fell considerably over the same period.

The way in which cyclists lock their bicycles is a further factor. Several studies report that

stolen bicycles are often locked insecurely (Mercat and Heran 2003; Roe and Olivero 1993). A study comprising over 8,500 observations of cycle locking events in the UK found “secure” locking techniques – therein measured as instances where both wheels and the frame were attached to parking furniture – to be atypical; other (less secure) ways of parking a bicycle were dominant (Sidebottom et al. 2009). Such findings are important in highlighting the potential limitations of schemes that aim to increase the use of robust locks but neglect to provide guidance as to how they should be applied.

Insecure locking behavior is also likely to be a function of what a cycle is locked to. In urban settings many bicycles are *flyparked* (Johnson et al. 2008): fastened to street furniture not designed for that purpose (i.e., railings, parking meters, and trees). Flyparked cycles may be at greater risk of victimization because such furniture affords little scope for secure locking (as defined previously). While this is yet to be systematically tested, recorded crime statistics from the London Borough of Camden, England, indicate that of all bicycles reported stolen between 2004 and 2005, 72 % were flyparked. From a town planning perspective, high levels of flyparking may indicate insufficient or inappropriate (poorly positioned) formal bike parking opportunities.

In one of the few empirical studies not to employ Anglo-American data, Zhang et al. (2007) assessed household- and area-level determinants of residential cycle theft victimization in the city of Tianjin, China, using data collected as part of a household survey. Informed by the routine activity approach, they find, among other things, that the risk of cycle theft is positively associated with neighborhood-level crime and deviance, therein taken to be a proxy measure for exposure to offenders. The number of adults per household (a proxy for guardianship) was found to be a significant protective factor against cycle theft.

Research across many crime types demonstrates that previous victimization is a reliable predictor of future victimization. While the

evidence for repeat cycle thefts is limited, those studies that are available suggest the same patterns are also apparent. Analyzing survey data from the Netherlands, Wittebrood and Nieuwebeerta (2000) report that prior victimization was significantly associated with the probability of further incidents of bicycle theft. This is consistent with data from Melbourne, Australia, which indicate that under a third of bicycle theft victims accounted for 60 % of all thefts reported (Johnson et al. 2008). Put differently, a small proportion of cycle theft victims disproportionately account for a large number of cycle theft victimizations. Extending this concept further, Johnson et al. (2008) show that the risk of cycle theft victimization displays a contagion-like quality across space and time. Analyzing recorded crime data from Dorset, England, they find that in the wake of a cycle theft and for a period of around 4 weeks, further incidents were more likely to occur at locations nearby and up to a distance of about 450 yards.

## Prevention

Johnson et al. (2008) provide a review of various interventions designed to reduce cycle theft and categorize them as follows: (1) interventions which seek to catch bicycle thieves *in the act*, (2) initiatives designed to deter bicycle thieves through focusing on the registration and recovery of bicycles (thereby making stolen bicycles more risky to dispose of), (3) schemes to improve the security of bicycle parking facilities (both cycle parking furniture and parking facilities as a whole), and (4) interventions which try to increase the security of locks and/or the manner in which they are applied.

Despite various interventions being implemented, few robust evaluations of attempts to reduce cycle theft are available. Situational measures designed to prevent (rather than detect) bicycle theft through altering cyclists' behavior in ways that increase the effort and risk associated with stealing cycles have yielded positive results. Two studies evaluating situational measures warrant mention. The first concerns a targeted publicity

campaign in which stickers – designed to improve cyclists’ locking practice by depicting how to lock a bicycle securely – were attached to a series of bicycle parking stands in on-street public cycle parks in the UK (Sidebottom et al. 2009). Pre- and post-intervention observations found modest albeit statistically significant improvements in the security of cyclist’s locking practices at bicycle parking stands where the intervention was fitted compared to the control sites. Importantly this pattern was consistent across two different settings. Sidebottom and colleagues conclude that communication strategies of this kind might constitute a cheap, scalable “quick win” against cycle theft.

The second intervention concerns the design of bicycle parking furniture. As alluded to previously, how secure a cycle is parked is partly a function of what it is locked to. The common Sheffield (or  $\cap$ -shape) stand, for example, makes it difficult for cyclists to lock the frame and both wheels. Many only lock the top crossbar of their bicycle as it runs parallel to the horizontal bar of the Sheffield stand. Alternative designs have therefore been developed in an attempt to encourage more secure locking styles. An example is the caMden M-shaped stand, which is designed in such a way so as to remove the opportunity for cyclists to lock the crossbar to the stand, encouraging the cyclist to instead apply a more effective locking practice, such as securing both the wheels and frame. Thorpe et al. (2012) describe a study in which the impact of seven prototype parking stands designed to increase securer locking practices was evaluated (some examples are in Fig. 1). Using data gathered through 3,563 observations, they report significant improvements in locking practice at the prototype bicycle stands compared to the control (Sheffield) stands. They also report considerable variation *between* the prototype stands in terms of their effectiveness and popularity.

A limitation in the above studies is noteworthy. Both evaluations use locking practice as an intermediate outcome measure which is hypothesized to precede the ultimate outcome measure of interest (a reduction in bike theft). In both studies, it was important to conduct an intermediate outcome measure evaluation because if the



**Bicycle Theft, Fig. 1** Examples of the prototype bicycle parking stands (Source: Thorpe et al. 2012)

interventions are not found to change the locking practice of cyclists, then there would be no reason to expect an impact on levels of cycle theft. The reason the study authors did not conduct an ultimate outcome measure evaluation was due to shortcomings in the recorded crime data available, specifically the level of geographical resolution associated with incidents of bicycle theft. Briefly, many recorded bicycle thefts are often reported as having taken place at landmarks, shops, or streets rather than specific locations, and consequently the exact site of the theft

event cannot easily be determined. This lack of information may, in part, reflect the low priority status that some suggest the police attach to cycle theft. This lack of specificity is problematic because the interventions described in the above studies were implemented at *specific* cycle parking sites located on streets where other – nonintervention – cycle parking opportunities are also available. This presents an obvious problem for analysis because it would be unclear whether stolen bicycles were fastened to “treatment” street furniture or elsewhere (be that control parking stands or flyparked). This brings forth two issues. First, such problems are likely generalizable to other settings and should be considered in advance of conducting comparable studies. Second, further research is needed to determine whether, as hypothesized, positive changes in the locking practice of cyclists are associated with reductions in cycle theft.

### Future Directions

We began this entry by highlighting the lack of bicycle theft research hitherto. Various areas of relevance to policy and practice remain unexplored. The following are considered to be some of the most important. They are outlined with the intent of stimulating the reader to initiate further research.

#### The Stolen Bike Market

It is a widely held assumption that many bicycles are stolen with the intention of being resold for profit. Indirect evidence in the form of low recovery rates of stolen cycles lends support to this claim. It follows that disrupting the market for stolen cycles holds much potential for effectively reducing the problem. Evidence on the use of *market reduction approaches* (see Sutton 2005) to reduce other forms of acquisitive crime suggests that such strategies are promising. These schemes employ various tactics to make the buying and selling of stolen goods riskier for offenders. Regrettably, little is known about the market for stolen bicycles, specifically the role of online (legitimate) auctions as a means of

disposal. The proof-of-ownership problem implies that few bicycles could easily be identified as stolen, which aids the resale of stolen bikes and reduces the risk of apprehension. Research concerned with better illuminating the dynamics of stolen bike markets is therefore required.

#### Cycle Hire Schemes: Criminogenic or Criminocclusive?

Cycle hire schemes are increasingly common in many urban settings. The rationale is that increasing the availability of cycles may lead to increases in the number of individuals cycling – the sought-for objective. As already mentioned, increased cycle usage – particularly as an alternative form of urban transport – may generate increases in the levels of cycle theft. Alternatively, cycle hire schemes may lead to reductions in theft by providing secure storage facilities and (as is often the case) by requiring cyclists to register their personal details, including banking information, before they can access cycles thereby reducing anonymity which would otherwise facilitate cycle theft. Furthermore, where financial details are required to use the cycles, this should reduce the rewards associated with stealing hire cycles.

Successful cycle hire schemes could reduce bicycle theft in other ways. For example, if such schemes result in an increase in the number of cyclists, and if the parking facilities for cycle hire schemes are located near to other cycle parking facilities, this may provide additional natural surveillance at such facilities throughout the day. Furthermore, the components used to manufacture cycle hire bikes can often only be used for that type of bicycle. For example, the London cycle hire scheme uses bicycles constructed of oversize, non-common parts which are incompatible with non-hire bikes. An advantage of this is that such cycles are unlikely to be stripped for parts (see Johnson et al. 2008) as they are not typically the sort of bicycle that would be attractive to own, largely because they are designed so as to be clearly identifiable as for-hire bicycles, thereby making them unattractive to thieves who might seek to steal them, or those who might want to purchase a second-hand bike.

To our knowledge, no published research has explored the impact of cycle hire schemes on the levels and patterns of cycle theft. Such research could usefully guide prevention efforts as well as inform the operation of cycle hire schemes.

### Residential Cycle Theft

Victimization surveys maintain that the majority of bicycles are stolen from in and around the victim's home. Yet the research which is available on bicycle theft is overwhelmingly concentrated on theft of bicycles from public locations. This asymmetry may relate to the ease with which agencies (and individuals) with the ability to influence the conditions conducive for cycle theft can be mobilized to behave differently; there is arguably greater scope, through leveraging public agencies responsible for crime prevention and community safety, to manage and reduce opportunities for cycle theft in public places than to persuade individuals in or around their homes to modify their behavior. Either way, there is much to be gained by analyzing the patterns of residential cycle theft with a view to determining practical ways to tackle it.

### The Broken Bike Effect

Abandoned bicycles are common. In calculating the volume of cyclists at the University of California, Lovejoy and Handy (2011) estimate that 23 % of total rack capacity was taken up by abandoned cycles. The relationship between abandoned bikes and theft is yet to be empirically examined, but observational research by Gamman et al. (2004) suggests that bicycle parking stands adjacent to damaged or abandoned bicycles are less popular among cyclists, even when located closest to the destination served. Two outcomes are envisaged, both leading to increases in cycle theft. First, they argue that on encountering abandoned bikes, cyclists may be provoked to park their cycles elsewhere, possibly leading to an increase in flyparking (which as described often affords less secure parking opportunities than street furniture which is designed with bike parking in mind). Second, they suggest that cycle parks containing damaged or abandoned bicycles may signal to offenders that

this is an area lacking in guardianship thereby constituting a conducive location in which to offend. Gamman et al. (2004) refer to this phenomenon as the "broken bike" effect, invoking the mechanism underpinning the well-known broken windows theory (Kelling and Wilson 1982).

The broken bike effect is yet to be empirically tested, but could be. For example, in a recent study Keizer et al. (2008) examined broken windows theory using an experimental manipulation. Briefly, they observed peoples' behavior in a real-world setting for a range of conditions. In one experiment, leaflets were attached to cyclist's parked bicycles, and for one condition other leaflets were scattered (by the experimenters) on the floor nearby. In the "control" condition, no leaflets were littered in this way. The empirical question was whether the way in which cyclists' would dispose of the leaflets was affected by the experimental condition. That is, would those who discovered the attached leaflets in the presence of litter also be more likely to litter than their counterparts? The results of the study were quite conclusive, clearly demonstrating that where litter was present, cyclists were also more likely to litter than when it was not. While there may be ethical issues associated with conducting an analogous experiment; that is, by seeing if cycles are more likely to be stolen where "broken bikes" are introduced at a parking facility and when they are not, it would be possible to see if the removal of existing damaged or abandoned bikes has an effect on rates of cycle theft.

In closing, it is evident that cycle theft is a considerable problem. Relative to other property that people are likely to own, such as an iPad, they are also valuable. However, they are routinely left unguarded around the home and in public spaces thereby making them attractive targets to thieves. Recent studies have focused on the problem of bicycle theft, but it is quite clear that more research is required if we are to understand how to prevent this type of crime. As has been discussed, if cycle theft continues to increase, it is possible that this will be an impediment to the uptake of cycling and hence the sustainable transport agendas of many countries.

## Related Entries

- ▶ [Designing Products Against Crime](#)
- ▶ [Fencing/Receiving Stolen Goods](#)
- ▶ [Motor Vehicle Theft](#)

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## Biker Clubs/Gangs

- ▶ [Motorcycle Clubs or Gangs?](#)

## Biological Geographical Profiling

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### Overview

Geographic profiling was originally developed as a statistical tool in criminology, where it uses the spatial locations of linked crimes (e.g., murder, rape, and arson) to identify areas that are most likely to include the offender's residence. In criminology, geographic profiling uses these crime locations to create a probability surface that is overlaid on the study area to produce a geoprofile. Geoprofiles do not provide an exact location for the criminal's home, but allow the police to prioritize investigations by systematically checking suspects associated with locations in descending order of the height of these locations on the geoprofile, facilitating an optimal search process based on decreasing probability density. The technique has been extremely successful in this field, and it is now widely used by police forces and investigative agencies around the world. Recently, the same techniques have begun to be applied to biological data, initially in the field of animal foraging and hunting behavior, but also in epidemiology and invasive species biology, where geographic profiling can be used to locate the sources of infectious disease or of invasive plants and animals as a prelude to targeted control efforts. As the technique has now been shown to be useful in such divergent scenarios from those for which it was originally developed, it raises the intriguing possibility that geographic profiling could be a useful general tool for studying spatial patterns in biological data. Here, we review the work in this area, and suggest further avenues for future research. We go on to consider ways in which this highly successful transfer of ideas from criminology to biology might also work in the opposite direction.

### Introduction

Geographic profiling is well established in criminology, with a proven track record of success. It has recently begun to be applied to biological data. In this entry, we will first of all outline the basic ideas underlying geographic profiling (section "Introduction"), before reviewing the existing studies of biological data using geographic profiling, and considering how these differ from the model's application in criminology (section "From Criminology to Biology: Applications of Geographic Profiling to Biology"). Having discussed how ideas from geographic profiling have fed into biology, we will suggest ways in which ideas from biology might in turn feed-back into geographic profiling in general, and criminology in particular (section "From Biology to Criminology: Future Developments").

### Geographic Profiling

Geographic profiling is a statistical technique used in criminology to prioritize large lists of suspects in cases of serial crime, such as murder, rape, or arson. The need for such a technique arises because criminal investigations often generate too many, rather than too few, suspects; for example, the enquiry into the Yorkshire Ripper murders in the UK between 1975 and 1980 generated 268,000 names (Doney 1990). Obviously, it will frequently be impractical to follow up all but a handful of these names. Clearly, any technique that allows police forces to prioritize such lists of suspects is likely to be of enormous value.

In essence, the model is simple and depends on two concepts: (1) distance decay and (2) the buffer zone (Rossmo 1999; Le Comber et al. 2006). The first concept relies on the fact that, because traveling incurs costs in time, effort, and/or money, most crimes occur relatively close to an "anchor point" (usually the criminal's home or workplace) (for instance, 70 % of arsons occur within two miles of the arsonist's home (Sapp et al. 1994)). However, the anchor point is also typically surrounded by an area (the buffer zone) in which offenses are relatively rare. This buffer zone arises partly because of increases in

detection risk related to reduced anonymity within the criminal's local neighborhood, and partly because the number of criminal opportunities increases geometrically with distance traveled from home. The size of the buffer zone is specific to an individual criminal and location, since it will be affected by the criminal's willingness and ability to travel, and also the underlying distribution of opportunities for crime (the "target backcloth" (Rossmo 1999)).

Geographic profiling uses the opposing effects of distance decay and the buffer zone to calculate the probability of offender residence for each location within the study area, producing a three-dimensional probability surface (called a jeopardy surface). Locations in which it is more likely that the offender might live are indicated by higher points on the jeopardy surface. Overlaying the 3-D jeopardy surface on to a search area map produces a geoprofile. Hence, geoprofiles do not provide an exact location for the criminal's home, but they allow the police to prioritize search locations by starting with the highest point on the jeopardy surface. Systematically checking locations in descending order of their height on the geoprofile probability surface describes an optimal search process based on decreasing probability density. Therefore, the better the geographic profiling model performs, the shorter the search before the real location of the offender's home is found (Rossmo 1999).

Because geographic profiling seeks to describe an optimal search, the model's performance can be assessed simply by asking how high up the jeopardy surface, the true anchor point lies. This measure, which is expressed in terms of the hit score percentage (HS%), is the proportion of the study area (in criminology, this is usually the area bounding the crimes, plus an additional 10 % of the area surrounding this, to allow offender source locations to come from outside the area of the crime sites) that must be searched before the true anchor point is found. The smaller the HS%, the more accurate is the geoprofile. A hit score of 50 % is what would be expected from a nonprioritized (i.e., random or uniform) search; thus, a hit score of 10 % describes a search which is five times more efficient than a random search (Rossmo 1999).

## From Criminology to Biology: Applications of Geographic Profiling to Biology

Although geographic profiling was originally designed to apply to crimes such as murder, rape, and arson, it has had numerous success in other areas, including burglary, counter-insurgency and piracy (see, e.g., Kucera (2005) and Rossmo and Harries (2011)). Based on its applicability to a range of problems in a variety of different fields, its application to biological data was an obvious next step. Given the similarities between criminal hunting behavior and animal behavior, it is perhaps not surprising that the first paper to apply geographic profiling in a biological context looked at animal foraging (Le Comber et al. 2006).

### Geographic Profiling and Animal Foraging

Geographic profiling was introduced to biology in a 2006 paper in the *Journal of Theoretical Biology* (Le Comber et al. 2006). In this study, the authors used data from radio-tracking studies of two species of bat, the common and soprano pipistrelles (*Pipistrellus pipistrellus* and *P. pygmaeus*) in north-east Scotland. A previous study had identified both roost sites and foraging sites, and the authors fitted Rossmo's criminal geographic targeting (CGT) model (Rossmo 1999) for each bat and showed that the fitted model parameters ( $B$ ,  $f$ , and  $g$ ) could be used to locate roost sites, using foraging sites as input, analogous to crime sites. Interestingly, the fitted values differed between the two species, despite their close genetic relatedness. This probably reflects their different foraging strategies; *P. pygmaeus* forages preferentially in riparian habitats (i.e., along the edges of rivers and lakes) that support higher numbers of insect taxa (Gressitt and Gressitt 1962; Townes 1962), while *P. pipistrellus* is more generalist. This specialization in *P. pygmaeus* is likely to mean that this species must forage over greater distances to locate sufficient prey items to satisfy its energetic demands. This was an intriguing result, suggesting that when anchor points such as nests, roosts, or dens are known, fitted CGT model parameters could provide a concise way of describing complicated foraging patterns.



The bat study was followed by a second study of animal foraging, this time in bees, but using laboratory data rather than field data (Raine et al. 2009). Bees were allowed to enter a flight arena approximately 1 m square, via a central hole, and allowed to forage on artificial flowers containing a sucrose solution. Again, the CGT algorithm successfully located this entrance. Fitting model parameters in the same way as in the bat study also showed that when the artificial flowers were presented at higher density, the size of the buffer zone decreased. This was of interest because, in criminology, little may be known about the target backcloth, since law enforcement agencies will have information on crimes committed, but not always on potential crimes that were not.

Another interesting extension of this study involved using “virtual” bees, in a similar experimental design to the real bees, using a variety of plausible foraging algorithms (including spiral searches, nearest-neighbor methods, and a variety of others). Just as the fitted model parameters could be used to differentiate between the foraging patterns of the two bat species, they could be used here to distinguish between different foraging rules. Crucially, for biologists, these could also be compared to the behavior of the real bees, allowing the authors to rule out some of the suggested foraging algorithms as inconsistent with the patterns observed in the real bees.

At about the same time, Martin et al. (2009) used geographic profiling to study great white shark predation on seals off the coast of South Africa. Again, much of the interest of this paper derived from aspects tangential to the main purpose of geographic profiling, that is, identifying sources for point pattern data. In this case, the study identified a well-defined search base or anchor point 100 m seaward of the seal’s primary island entry-exit point. This is not where the chances of intercepting seals are greatest, and the authors suggested that it represented a balance between prey detection, capture rates, and competition. In addition, the different geoprofiles observed for sharks of different ages showed that smaller sharks exhibited more dispersed search patterns and had lower success rates than larger sharks, suggesting either that hunting success

improved with experience or that larger sharks excluded smaller sharks from the most profitable areas.

### Geographic Profiling and Epidemiology

As noted above, animal foraging behavior has much in common with criminal hunting behavior. The extension of geographic profiling to epidemiological datasets, however, involves several important differences, notably the increased importance of multiple sources, and the possibility, for some diseases, of secondary sources. These issues are discussed in [section “Differences Between Biology and Criminology.”](#)

The application of geographic profiling to epidemiological data fills a surprising gap in epidemiology. As Buscema et al. (2009) pointed out, classical epidemiology tends to model the spread of infectious epidemic diseases, and few attempts have been made to identify the origin of the epidemic spread. This is surprising because, as Le Comber et al. (2011) noted, in many diseases, infection sources can be highly clustered: For example, malaria parasite transmission is strongly dependent on the location of vector breeding sites, and most transmission only occurs within short distances of these sites; in Africa, these distances are typically between a few hundred meters and a kilometer, and rarely more than 2–3 km (Carter et al. 2000). Because of this clustering, untargeted control efforts are highly inefficient. Although source reduction of mosquito larval habitats can dramatically mitigate malaria transmission (Yohannes et al. 2005; Gu et al. 2006; Walker and Lynch 2007; Gu and Novak 2009), the transient nature and diversity of potential vector breeding sites makes the identification and control of breeding sites difficult (Carter et al. 2000). As a result, evidence-based targeting of interventions is more efficient, environmentally friendly, and cost-effective than untargeted intervention. This, of course, is exactly why the problem geographic profiling was designed to solve.

The first attempt to apply geographic profiling to epidemiological data was by Buscema et al. (2009). This study examined Chikungunya fever, foot and mouth disease, and cholera, but concluded that geographic profiling was less efficient

than the authors' preferred artificial intelligence method, the H-PST (Hidden-Pick and Squash Tracking) Algorithm. However, this study mistakenly used the distance between the peak of the geoprofile and the correct source as a measure of model performance. As Rossmo (1999) was careful to point out, geographic profiling does not attempt to provide a point estimate for the anchor point (here, the infection source), as methods such as spatial mean, spatial median, and center of minimum distance seek to do; rather, it describes an optimal search strategy. Because of the complexity of jeopardy surfaces, the distance from the peak of the geoprofile to the anchor point is irrelevant; what matters is what percentage of points within the study area have higher Z values than the anchor point. In fact, when there are multiple sources of infection (e.g., the malaria cases examined by Le Comber et al. (2011)) this is an important advantage of geographic profiling over the H-PST algorithm, since methods that provide point estimates of sources will typically perform poorly when there is more than one source. When Le Comber et al. (2011) revisited one of the case studies in the Buscema paper (John Snow's data on the 1854 London cholera outbreak (Snow and Frost 1936)), geographic profiling performed extremely well.

### Geographic Profiling and Invasive Species Biology

Another promising area for the application of geographic profiling to biological research concerns the spread of invasive species, an area with more in common with epidemiology (e.g., multiple and secondary sources) than with animal foraging. The issue is not trivial; invasive species are now viewed as the second most important driver of world biodiversity loss behind habitat destruction and have been identified as a significant component of global change (Vitousek et al. 1996; Wilcove et al. 1998). The cost of invasive species can run from millions to billions of dollars per occurrence (Mooney and Baker 1986; Pimentel et al. 2001), and invasive species have been shown to affect native species through predation and competition, modify ecosystem functions, alter the abiotic environment, and spread

pathogens (Strayer et al. 2006; Ricciardi 2007). In addition, the problem is likely to get worse as climate change and anthropogenic influences lead to increased range shifts (Hulme 2007). For these reasons, prevention and control of invasive species has been identified as a priority for conservation organizations and government wildlife and agriculture ministries globally (Mooney and Baker 1986; Hulme 2006).

Although only one study has looked at invasive species and geographic profiling, the results are promising. Stevenson et al. (2012) analyzed historical data from the Biological Records Centre (BRC: <http://www.brc.ac.uk/>) for 53 invasive species in Great Britain, ranging from marine invertebrates to woody trees, and from a wide variety of habitats (including littoral habitats, woodland and man-made habitats). For 52 out of these 53 datasets, geographic profiling outperformed spatial mean, spatial median, and center of minimum distance as a search strategy. The study also compared fitted parameter values between different species, groups, and habitat types, with a view to identify general values that might be used for novel invasions where data are lacking, with some success.

### Differences Between Biology and Criminology

The first applications of geographic profiling to biology involved fairly straightforward mapping of the basic concepts from criminology: In these studies, animal foraging sites were used to identify animal roosts (or other home locations) in the same way that crime sites are used to identify probable areas of offender residence in criminology. However, later extensions, and most notably studies of invasive species biology and epidemiology, differ in a number of areas.

In criminology, the application of geographic profiling will usually (or at least often) deal with the crimes of single individual with a single anchor point, often (hopefully!) over a short period of time. In contrast, biological data can involve multiple organisms (and hence multiple anchor points), secondary anchor points, and extended time periods.

### Multiple Anchor Points

In criminology, although jeopardy surfaces may have several peaks, relating perhaps to the criminal's home, work place, or a relative's home (or, in the case of the Hillside Strangler, the two homes of the two cousins who committed the crimes together; Rossmo (1999)), it is usually assumed that the crimes are linked; that is, they are carried out by a single individual (some applications of geographic profiling to terrorist activities may be an exception). In invasive species biology or epidemiology, it is usually impossible, or at least impractical (e.g., perhaps requiring expensive genetic testing to identify particular strains of virus, or genotypes of individual plants or animals), to link events to individual sources. For example, the malaria cases in Le Comber et al. (2011) were treated as a single group of "crimes," although it is possible that six or more *An. sergentii* breeding sites were involved. In this case, data was simply pooled and the heights of each potential source on the geoprofile examined separately; Stevenson et al. (2012) took a similar approach with invasive species. At this point, no studies have explicitly examined the effect of multiple sources on geographic profiling model performance, although the data in Le Comber et al. (2011) and Stevenson et al. (2012), along with some simulation data (unpublished), suggest that geographic profiling's performance relative to simple measures of spatial center tendency (spatial mean, spatial median, center of minimum distance) will increase as the number of sources increases.

### Secondary Anchor Points

Murder victims do not go out and commit murders; victims of arson do not go out and burn down other buildings. Similarly, in the context of animal foraging, seals predated upon by great white sharks do not then predate upon other seals. However, the sites of new biological invasions can go on to act as sources for further waves of invasion; similarly, in many disease systems, infected individuals will go on to affect other individuals. These secondary sources/anchor points may dramatically alter the spatial patterns observed.

### Extended Time Periods

In criminal investigations, the persistence of a series of linked crimes over a number of years obviously represents a failure of law enforcement; cases such as Jeffrey Dahmer (1978–1991) or the Yorkshire Ripper (1975–1980) (Rossmo 1999) are, hopefully, an exception. In biology, this need not be the case, and longer-term datasets may in fact be highly desirable. Ecological datasets in particular can span decades or even centuries (Stevenson et al. 2012), and can involve multiple "outbreaks," while criminal cases typically span shorter periods of time. In this sense, biological data may offer a distinct advantage over criminological data. Invasions and disease outbreaks have long histories and repeated outbreaks, so assuming that repeated invasions follow similar histories, previous outbreaks (perhaps with known sources) can be used to validate the geographic profiling model. Future spread can then be predicted using parameters established from the organism's own invasion history.

## From Biology to Criminology: Future Developments

Clearly, geographic profiling has already made important and interesting contributions to biology, in fields including animal foraging, invasive species biology, and epidemiology. In this section, we will consider how insights from biology might feed-back into geographic profiling theory, and criminology generally. Broadly speaking, these fall into three classes: (1) mathematical developments; (2) spatial methods; and (3) experimental methods.

### Mathematical Developments

The underlying mathematics of geographic profiling has recently attracted attention, notably from O'Leary (2009, 2010). Here, we will briefly discuss four areas of interest. These are (1) incorporating a Bayesian framework; (2) fitting model parameters; (3) incorporating explicit models of behavior; and (4) considering different mathematical distributions in addition to the exponential functions used in the Rossmo model (Rossmo 1999).

### Bayesian Statistics

Recent papers on the mathematics of geographic profiling, notably those of O'Leary (2009, 2010), highlight two different approaches to the subject. Because of its origins in criminology, one of these approaches is highly practical, concentrating on the model's use as a tool in investigations of serial crimes such as murder, rape, and arson. Most applications of the model within biology to date have taken a similar approach, with the main results of the various studies (Le Comber et al. 2006; Martin et al. 2009; Raine et al. 2009) being to demonstrate the applicability of the model to different types of data. O'Leary's papers take a different tack, considering the underlying mathematics themselves, with less attention paid to the model's practical utility. It might be argued that these are two parallel avenues of research that are unlikely to intersect. However, our view is that it might be possible to bring these two strands together. The acid test, of course, will be whether different mathematical approaches (e.g., embedding the model within a Bayesian framework, or considering other underlying spatial distributions such as the Cauchy distribution (see below)) can improve the model's performance.

### Fitting Model Parameters

Rossmo's (2009) model uses three parameters,  $B$ ,  $f$ , and  $g$ .  $B$  is the width of the buffer zone, while  $f$  and  $g$  together determine first the increase in the probability of a crime occurring moving outward from the anchor point toward the edge of the buffer zone, and second the decrease moving further beyond this. In criminology, the width of the buffer zone is typically set at half the mean nearest-neighbor distance, with  $f$  and  $g$  set at 1.2. To date, studies in biology have either adopted this method (Martin et al. 2009; Le Comber et al. 2011), or attempted to fit spatial data to known anchor points (Le Comber et al. 2006, 2011; Raine et al. 2009). This may matter because multiple sources (see above) could lead to different patterns of "crime sites," depending on their number and proximity to each other; there may also be some use in using fitted model parameters as descriptors of more complex

spatial patterns, as in Raine et al. (2009). Thus, the issue of precisely how model parameters are fitted may be of interest. Although to date published studies have used only simple methods (see, for instance, (Le Comber et al. 2006; Raine et al. 2009)), an obvious approach is to use Markov Chain Monte Carlo (MCMC) methods to explore parameter space. In our view, this is likely to be an interesting area of development, although care will have to be taken to avoid well-known problems of over-fitting (Hawkins 2004).

### Incorporating Explicit Models of Behavior

Current geographic profiling models are generic. They express simple geometric patterns such as exponential or normal decay. The Rossmo model incorporates  $B$ , an explicit parameter for the buffer zone, but  $f$  and  $g$  remain as exponential decay functions. Rather than fitting a generic statistical model, the aim of mathematical modeling is to find true relationships that underlie the data. Ideally we should have models that have parameters that explicating relate to some aspect of predator behavior, invasive species dispersal, or epidemic spread.

### Distribution Models

Models of offender behavior will obviously depend on the precise spatial distribution of crime sites. Canter and Hammond (Canter 2006) examined logarithmic, exponential, and quadratic functions, while the Rossmo model (Rossmo 1999) uses an exponential function, as does CrimeStat (Levine 2009). O'Leary (2010) introduced the idea of alpha as a single parameter from a normal distribution, suggesting that it could be used as a predictive parameter to represent average offense distance; the optimized parameter  $B$  in (Stevenson et al., 2012) fulfills similar criteria if  $f$  and  $g$  are fixed in the Rossmo model. In a later study, O'Leary (2010) compared single- and two-parameter normal, and single- and two-parameter exponential functions, concluding that there was no difference between normal and exponential in the single-parameter models in Baltimore county burglaries; neither of the two-parameter models performed as well as the single-parameter models.

The distribution models appropriate for offender behavior are likely to be substantially different to models appropriate for disease and animal dispersal. Invasive species dispersal is likely to be strongly nonnormal; dispersal includes both short local dispersers and long escalated movements: for example, Levy flight (see, e.g., (Viswanathan et al. 2000; Viswanathan and Bartumeus 2002; Bartumeus 2009)). This type of dispersal is described by a Cauchy distribution (Viswanathan et al. 2000). The Cauchy distribution is related to normal distributions, in that dividing one normal distribution centered on zero by another centered on zero will yield a Cauchy distribution. In fact, the Cauchy distribution can be made to resemble a smoother version of the Rossmo distribution, but avoiding the latter's sharp peak at the radius of the buffer zone. In addition, Cauchy distributions also allow the inclusion of a width or thickness parameter, gamma, which describes the "fatness" of the distribution's tail, relating to the amount of longer dispersal events. A Cauchy distribution could also be used in criminology, and would relate to the occurrence of two different types of jumps already documented in the criminology literature, prowlers, and commuters (Rossmo 1999).

#### Running Models Forward in Time

Finally, one intriguing possibility following O'Leary's work (2009, 2010) is that of running models forward in time – rather pleasingly, this would link current models of spatial epidemiology such as risk mapping (Leung et al. 2002) with geographic profiling, which is essentially retrospective in nature. O'Leary suggests using integration to generate a function that can then be used to predict future spread. The possibility of producing risk maps for offenders to predict possible sites of future burglaries or even more serious crimes is a real possibility, even when based on a small number of data points, in contrast to current hot spot mapping.

#### Spatial Developments

In the same way that mathematical studies are beginning to feed-back into geographic profiling, it seems likely that techniques from spatial

epidemiology may offer interesting avenues for research; in fact, as noted above, O'Leary's proposed approach (2009, 2010) may go some way toward allowing techniques from spatial epidemiology and spatial ecology to feed-back into geographic profiling.

One fruitful area is likely to be ecological niche mapping. Ecological niche mapping is used in invasion biology and macroecology to predict species spread based on associated habitat types (see, e.g., Kaschner et al. (2006)). Species found in particular ranges are associated with particular ecological factors; these can then be mapped to new ranges to predict spread based on these niche factors. We suggest that this type of modeling can be used to generate priors or hyperpriors for a Bayesian model of geographic profiling. True prediction requires knowledge of not only where the species is now and where it is dispersing to, but also what habitat is suitable for it to live in. Our prior estimation of where a species is capable of dispersing to will inform the geoprofile to produce a surface that includes both types of information. Obviously, this approach could also be applied to criminology, using information about neighborhood quality, street lighting, open spaces, frequency of police patrols, and so on.

#### Experimental Developments

One advantage the biologist has over the criminologist is that, in biology, experiments are far easier, and certainly less ethically problematic. For example, Raine et al. (2009) were able to manipulate the target backcloth in a study of bee foraging behavior that would simply not be possible in the context of crime. Thus, biology might be better placed to explicitly test some of the underlying assumptions and methodologies of geographic profiling.

A related point, alluded to above, is that in biology datasets, long-term datasets are more abundant, and replication is more exact: For example, in invasive species biology, it is possible, and even common, to have (1) repeated invasions of the same geographical area by the same species; (2) repeated invasions of different geographical areas by the same species; (3) repeated invasions of the same geographical area by different species. A rigorous

comparison of these different cases may help to disentangle those aspects of any observed spatial patterns that are due to the invader's behavior and/or biology, and the habitat's own attributes. The analogous exercise – understanding what aspects of spatial patterns of crimes are due to the criminal's behavior, and what aspects are due to the peculiarities of the target backcloth – is much more difficult.

## Conclusions

Although the application of geographic profiling to biological datasets is still relatively new, the early indications are that the method's considerable success in the field of criminology may be replicated in areas as seemingly diverse as animal foraging behavior, epidemiology, and invasive species biology. This is encouraging because, despite the obvious similarities between criminal hunting behavior and animal foraging behavior, there are several key differences that can arise in biology, notably the importance of multiple and secondary anchor points. To date, most studies using geographic profiling in biology have concentrated on demonstrating the method's utility. In contrast, much of the mathematical research has pursued a parallel line of enquiry, ignoring the method's application. Future work may bring these two seemingly distinct approaches closer together, and we suggest that, just as methods from criminology have proved of use in biology, some techniques from biology – for example, niche modeling, Levy flight, and optimization methods – may prove useful in criminology.

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## Biometrics and Border Control Policing

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### Synonyms

[Biometrics](#); [Border control](#); [Migration policing](#); [Technology](#)

### Overview

This entry examines the role of biometric technologies and databases in border policing. It commences with a definition of biometric technology and then proceeds to discuss the political economy of the biometric industry since the attacks of 9/11. Drawing upon a range of critical scholarship, a number of theories are discussed which interrogate the changing nature of citizenship and identity in relation to biometric databases. The entry also discusses some of the critiques raised by civil libertarians in relation to the assemblage of large-scale and frequently transnational databases. The discussion concludes by considering the constitutive role of biometric technologies in broader processes of the securitization of mobility.

### Key Issues/Controversies

Over the past decade borders and border enforcement have become the subject of intense scholarly interest within criminology, and more generally within the social sciences. In 1996 Saskia Sassen presciently identified border crossing as a “strategic site of inquiry about the limits of the new order” (xvi) under conditions of globalization. The drive – most readily apparent in states of the global north – to secure seamless circuits of capital, trade, and skilled migration, while fortifying national boundaries against

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perceived threats of organized crime, terrorism, and illegal migration, has resulted in considerable political, technical, and financial investment in border control (Aas 2011). The “informatization” of the border has been a crucial component of such developments – with a proliferation of databases, records, and files on citizens, migrants, business visitors, asylum seekers, and cross-border workers. Biometric identifiers are key elements of these proliferating databases which seek to control flows, identify risks, and banish threats (van der Ploeg 2006). This entry will detail key areas in the study of biometrics and border policing. While there is a technical literature in this field, primarily concerned with implementation (e.g., Woodward et al. 2003), this entry will focus on key issues and controversies that arise from critical scholarship. It will commence with a definition of biometrics, and then discuss the political economy of biometrics in relation to the security industry. The entry will then proceed to position the study of biometrics and border policing within wider debates about the changing nature of borders and mobility under conditions of globalization.

At the outset it is important to provide a brief explanation of what is under discussion in the scholarship surrounding “biometrics.” In general, biometric technology involves the collection of digital representations of physiological features unique to an individual, such as fingerprints, pattern of the iris, the retina, or voice patterns. Digital representations are then normally transformed into binary code by means of an algorithm to construct a template. These templates are accumulated in a centralized database that is accessed when, on subsequent occasions, the finger, hand, face, eye, or voice is presented to the system. If a matching template is found, the person is acknowledged and counts as known to the system. In some instances the representation may be stored on a chipcard rather than a template. The user then has to present the chipcard and requested body part to prove they are the legitimate user of the card (van der Ploeg 1999, p. 37).

Biometric technology uses two main methods for identity checks: verification and identification. Verification is essentially confirming people are who they say they are, and is achieved through

one-to-one matching. One-to-one matching is used, for example, in the identification of people traveling on false passports, but might also be used to facilitate more rapid immigration procedures for those possessing the designated biometric documents. Biometric technologies are also increasingly utilized in identification (that is determining who the person is, or in some instances is not) through one-to-many matching. The clearest example of one-to-many matching is evident in the use of facial recognition technology matched to CCTV cameras. Air passengers can have their faces scanned and checked against a database of “terrorists” or other “wanted” people (Lyon 2003).

In the wake of September 11, 2001 (hereafter 9/11), and the subsequent “war on terror” hi-tech solutions to problems of security — such as facial recognition technology, iris and retina scans, and smart identity cards — have proven incredibly persuasive and ascendant (Van der Ploeg 2003; Zuriek and Hindle 2004). The proliferation of biometric technologies has been most evident at the borders between nation states, where the use of biometric passports matched with surveillance tools such as face and iris recognition technologies is being rapidly deployed at airports and other land and sea border posts. It is important to note that the security industry was already expanding prior to the attacks of 9/11. As Garland (2001) noted, late modern societies had witnessed an expansion of the commercial security sector that frequently fueled public anxieties in relation to crime control while claiming to allay them. Nevertheless, the already expansionist trajectory of the security sector received a massive boost from the climate of heightened anxiety following 9/11, and later compounded by the 7/7 bombings on the London Underground and the Madrid bombings. Mike Davis predicted in 2001 that “the ‘Fear Economy,’ as the business press has labelled the complex of military and security firms rushing to exploit the national nervous breakdown, will grow fat amidst the general famine” (p. 45). Later commentators have suggested Davis’ prediction materialized. Webb (2007) has argued for the emergence of the “corporate-security complex” post 9/11, while Hayes (2010) outlines the emergence of a “security-industrial complex.”



Prior to 9/11 biometrics was a fringe element of the security industry widely regarded as being of limited application and subject to significant errors. However, post-9/11 the biometric industry has grown considerably in size (Zuriek and Hindle 2004; Wilson 2006; Webb 2007). Moreover, particularly in the US, government expenditure on security technologies accelerated in the wake of the attacks of 9/11 and the subsequent “war on terror.” In 2003 the Bush Administration earmarked \$38 billion in new spending for homeland security, while security budgets in Europe and Australia also ballooned (Zuriek and Hindle 2004). In this climate the biometrics industry has been well organized to claim market share and gain “brand recognition” for biometrics as a security technology. Security technology companies were aggressively marketing their wares to airport officials within days of the 9/11 attacks (ACLU 2004, p. 27). Within a fortnight of 9/11 the International Biometrics Industry Association (IBIA), an advocacy organization representing major biometric companies in the US, issued a press release highlighting the role of biometrics in the fight against terrorism. Visionics – a US manufacturer of facial recognition technology – suggested in a white paper entitled *Protecting Civilization from the Faces of Terror* that airport security, in the US the responsibility of the Federal Government, “demands substantial financial resources” to develop “technology that can be implemented to immediately spot terrorists and prevent their actions.” Boarding a plane, the white paper suggested, should no longer be considered “a right granted to all, but as a privilege accorded to those who can be cleared of as having no terrorist or dangerous affiliations” (cited in Zuriek and Hindle, p. 122). The political economy of biometric technology is constituted of complex networks of research laboratories, venture capitalists, and transnational corporations both stimulating and responding to expanding security markets that are both public and private (Walters 2010).

Biometric technologies have been heavily promoted as infallible despite their actual efficacy remaining highly questionable. At Palm Beach International Airport in the US, a trial of facial recognition technology failed to recognize

participating airport employees 53 % of the time (Wilson 2006). Results of independent evaluations of facial recognition technology in other locations suggest similarly dismal results (Clarke 2003). Accuracy rates for facial recognition and fingerprint scanning remain problematic, and a Japanese researcher was able to fool a system by using a gelatin-based fake finger (Lyon 2003, p. 71; Zuriek and Hindle 2004, p. 120). Even some within the security industry are uneasy about the rapid pace with which untested and poorly researched biometric technologies are being deployed (Wilson 2006, 2007). Nevertheless the appeal of biometric technologies may reside in their symbolic resonance rather than in any technical efficacy, a point to which this entry will later return.

Automated systems, it might be suggested, reduce questions of discretion and discrimination to the abstracted question of whether one is granted or denied access. Technological discourse frequently constructs biometrics as a neutral security tool enacting abstracted processes of authentication and verification. As Muller notes “why biometrics is so successful in concealing its exclusionary and discriminatory character is the way in which it tries to hide the question of identity behind the preoccupation with authenticity” (2004, p. 286). Nevertheless, while biometric technology may appear to do little more than enact automated functions of verification and authentication, critical scholars have argued that it heralds new forms of control and exclusion. Gilles Deleuze (1992), for example, has argued that contemporary societies are “societies of control” where surveillance is detached from discipline and is primarily concerned with the distribution of entitlements on the basis of identity. Nikolas Rose (1999) has argued that contemporary shifts represent the “securitization of identity” whereby the exercise of freedom requires proof of legitimate identity.

The concepts of “societies of control” and the “securitization of identity” suggest that biometric technologies are far from neutral but are rather deeply imbricated within new modalities of power. Digital biometric identifiers become vital tokens of contemporary citizenship, and an integral aspect of what Jones (2001) terms “digital rule.” “Digital rule” refers to the capacity

of control agents to assign access and authorization. Punishment increasingly takes the form of “withdrawal of access privileges.” This is a form of remote rule based upon databases and codes. The capability of remotely granting or denying access through biometric technologies linked to databases thus contains the capacity to deepen and widen social discrimination. Biometric technologies are hastening processes of what Lyon (2003) has termed “social sorting” where populations are digitally categorized as worthy and unworthy, included and excluded.

Similarly, scholars such as Graham and Wood (2003) have argued that these technological systems are far from neutral and abstracted, but are rather actively formed through social practices and decisions. As they note of digital surveillance systems, while they may be characterized by flexibility and ambivalence, and contingent upon judgments of social and economic worth built into their design, they are “likely to be strongly biased by the political, economic and social conditions that shape the principles embedded in their design and implementation” (2003, p. 229). Pugliese (2010) also argues that the categorizations of biometric systems are inherently racialized. Biometric systems, Pugliese suggests, are “calibrated to white,” whereby Whiteness is configured as the universal gauge determining the technical limits for image capture. Categories of racialized exclusion are therefore embedded within the technological infrastructure. Several scholars have examined biometrics through the prism of Foucauldian notions of biopower (Pugliese 2010). Alternatively, Didier Bigo (2006), drawing upon Agamben’s notion of the “ban” has suggested the concept of the “ban-opticon.” David Lyon neatly summarizes this concept noting that “the majority of mobile citizens of the global north are normalized travelers who accept the need security passes for fast-tracking through the airport as they accept the need for frequent flyer cards to get access to the club lounges, a focused surveillance is reserved for the *sans-papiers*, the potential terrorist, the refugee – those ‘trapped in the imperative of mobility’” (2008, p. 44).

Biometric technologies are thus not neutral but both constitutive and symbolic of transformations

in power and social classification and exclusion. By their very nature, biometrics form components of technological systems that imply the assembling of digitized databases on an unprecedented scale. Scholars such as Lyon (2008) remain concerned that such databases are being assembled amidst a “state of exception,” whereby nation-states increasingly enact decisions based upon political will rather than the constraints of normative law (Agamben 2005). Thus it could be argued that biometrics are deployed within a social context and organizing logic that inevitably heads towards exclusionary rather than inclusionary functioning. The potential for “actuarial justice” where the objective is risk management rather than rehabilitation and where predictors of dangerousness are engaged to preemptively target “problem” populations becomes amplified.

While a substantial scholarship has emerged around the issue of borders, the principal focus here is on how biometric systems connected to databases have facilitated the “delocalized border” (Bigo 2002). Aas (2005, p. 207) has observed that new technologies “seem both to transform the traditional space of government and to disrupt territorial boundaries,” as well as appearing to provide the most efficient solution to problems of risk and security. The borders of the global north are fast becoming high-tech borders, “capable of materializing in different sites around the globe” (Walters 2006, p. 197). Actuarial logic requires that containment measures be applied *before* any harm results (Wilson and Weber 2008). Risk thinking in relation to border control therefore leads inexorably to temporal, and hence spatial, displacement of the border. Thus the delocalized, technologically realized border is “performed” rather than drawn as a line on a map, is functional rather than physical (Weber 2006), and significantly reorganizes the spatiality of power (Walters 2006).

The logic of exclusion inherent in border control, coupled with mentalities of “risk reduction” and corresponding information technologies, produces strategies of “preemptive immobilization” aimed at certain categories of travelers who conform to set criteria. These risk profiles are constructed using aggregate information about

suspect populations, and applied through information technologies accessed by immigration authorities and their agents on or before the border. Surveillance technologies therefore expand the potential codes and categories of risk (O'Malley 2006). Nevertheless, border control is underpinned by more than a simple exclusionary logic. States have been seeking migration flows that are simultaneously accelerated for some and fortified against others, most often expressed as a binary opposition between "facilitation" and "security." Scholars have variously described this bifurcation of mobility – broadly equating to the increasing economic chasm between the global south and the global north – as the widening divide between "global tourists" and "global vagabonds," the sorting of mobile bodies into "kinetic elites" and "kinetic underclasses," the "mobility rich" and the "mobility poor," and "two-speed citizenship" (Bauman 1998; Adey 2004; Aas 2011).

For nation-states the engagement of biometric technology at physical borders bears a signification that neatly encapsulates the paradoxes of state sovereignty under conditions of globalization. Biometric technology offers the possibility of rapid flows of capital and global elites through borders while simultaneously fortifying the border against unwanted intrusions from "deviant" outsiders. The technology becomes instrumental in processes of global social classification in which "low risk" travelers are granted unimpeded access and mobility while "high risk" travelers from the Global South, compelled to travel with limited or no documentation, are excluded and blocked. Registered traveler programs highlight this two-tiered system of mobility emerging in the post 9/11 context. Privileged passenger programs facilitate the rapid and unimpeded movement of elite travelers from the global north. Simultaneously those from the global south are increasingly blocked from entry. In a global economy where mobility is equated to participation the consequences of this discrimination are enormously significant. In the US as such these systems of preferential mobility are encouraged in law. The *Aviation and Transportation Security Act 2002* provides that the Under Secretary of Transportation for Security may establish requirements to implement trusted traveler

programs. Registered Traveler Programs are intended not only to provide selected travelers with expedited processing at border points, but also to "target security resources to those travelers who might pose greater security risks."

Such systems have however been in place for some time. The US Immigration and Naturalization Service Passenger Accelerated Service System (INSPASS) a hand geometry system used in seven US and two Canadian airports has been in operation since 1993 (GAO 2003). Amsterdam's Schiphol Airport was the world's first airport to employ an automatic border control system using iris recognition technology for travelers. The "Privium" system, installed in October 2001, is intended to fast track passengers carrying an iris data-embedded smart card through passport control (Woodward et al. 2003, pp. 295–296; Lyon 2003, p. 71). Similar projects have also been undertaken in other locations. At Tokyo's Narita airport frequent customers of Japan Airlines are enrolled in a comparable system, has have been selected passengers at London's Heathrow airport and at Toronto and Vancouver (Wilson 2006). Biometric border control systems thus serve to exacerbate the trend identified by Bauman as "the extraterritoriality of the new global elite and the forced territoriality of the rest" (2000, p. 221). Biometric technology is therefore both a powerful signifier and a formative element in the widening chasm between a small global elite possessed of mobility and capital and the many in the global south geographically confined and impoverished.

It has been argued that states with diminished control of economic and social questions within their national boundaries increasingly turn to border security and migration control as key "performances" asserting their continued relevance and strength (Wilson and Weber 2008; Wilson 2006). Political scientist Wendy Brown suggests that border construction projects are "hyperbolic tokens" that attempt to signify resurgent nation-state sovereignty, despite the reality that they are often expressions of the withering of the nation-state and "the waning relevance and cohesiveness of the form" (Brown 2010, p. 24). For the truncated nation-states of late modernity, biometric technologies are potent signifiers of

a reinvigorated sovereign power with the capacity to assert impermeable borders. Iris and fingerprint scanners, passport kiosks, and smart cards are, from this perspective, integral props in the theater of statehood.

Such a theater of statehood is nowhere more in evidence than in the increased securitization of airports. The 9/11 attacks, and earlier instances such as the TWA flight crash in 1996, have been instrumental in facilitating heightened security measures in airports, and in embedding airports in public consciousness as filters of risk (Adey 2004). As border posts airports thus have substantial symbolic capital. As a report on Australian airport security noted “perhaps as important as their contributions to transportation and the wider economy is the symbolic significance attached to airports. They embody the modern world in all its complexity, since few other places bring together our most advanced technological creations and the intricate interconnected systems we have devised to serve both those creations and ourselves” (Wheeler 2005, p. 5). As highly symbolic nodes of modernity, airports become crucial platforms through which the power of the state to include and exclude is enacted. The centrality of securitizing airports in the post 9/11 environment then has powerful signifying functions. Mike Davis suggests that airports may function as microcosmic spaces of wider security and surveillance trends, noting that “the security regime of the airport departure lounges will likely provide a template for the regulation of crowds at malls, shopping concourses, sports events and elsewhere” (2001, p. 45). Biometric identification systems are integral elements of the intensified security regimes evident in airports (Zuriek and Hindle 2004, p. 129).

The signifying and political functions of biometric technology are also evident in its incorporation within the international passport system. Passports are the primary document for identifying, regulating, and tracing mobile individuals. The passport is, as Salter suggests, “a modern heuristic device which serves to link individuals to foreign policy, and according to which government agents classify travellers as safe or dangerous, desirable or undesirable, according to national, social or political narratives” (2004, p. 72). The spread of

biometric passports has largely been dictated by US legislation, and offers a tangible expression of US hegemonic power in the post 9/11 global order. Section 302 of the *Enhanced Border Security and Visa Entry Reform Act 2001* requires “a visa waiver country, in order to maintain program participation, to certify by October 26, 2003, that it has a program to issue to its nationals qualifying machine-readable passports that are tamper proof and contain biometric identifiers.”

The hegemonic power of the US is therefore instrumental in leading and setting the final standards for the global introduction of biometric passports (Wilson 2006). The International Civil Aviation Organization (ICAO), the organization governing international civil aviation, has been examining the issue of biometric passports since 1995. However, until recently national and regional legislation protecting privacy and civil liberties mitigated against their adoption. In May 2003, the G8 countries (Canada, UK, France, Japan, Italy, Russia, Germany, and the US) entered into an agreement to implement a biometric passport system. Civil libertarians remain troubled that passports will utilize face recognition, not only among the least reliable of biometrics but also one that can be used at a distance to track individuals without their knowledge. Moreover the passports are to include RFID (Radio Frequency Identification) tags. These are tiny computer chips that, when receiving a radio signal from an RFID reader, use that power to transmit the data they store. And in US passports this information would include name, date of birth, place of birth, and a digital photograph and digital face recognition template. Organizations such as the American Civil Liberties Union maintain that this raises substantial privacy and security issues and significantly intensifies the potential for the surveillance and tracking of individuals.

Critics maintain that biometric passports are a proxy for a global database. The International Campaign Against Mass Surveillance, for example, argues that biometric passports represent one avenue of obtaining “nearly universal registration of everyone on the planet” (cited in Wilson 2006). For critics the potentially ominous ramifications of this development reside not in the documents

themselves but in the possible databases linked to them and the tracking and classification potential they unleash. The assemblage and mobilization of large-scale government databases in relation to visa applications and the tracking of “non-citizens” was evident in the detention of hundreds of Muslim non-citizens in the wake of September 11. US authorities systematically registered and created dossiers on nearly every male over the age of 15 with origins in a list of countries (mostly Muslim) traveling in the US. Individuals on the list were required to report to the government to be fingerprinted, photographed, and questioned. Those who failed to register risked deportation and criminal penalties. This was carried out under the aegis of a program called the National Security Entry-Exit Registration System (NSEERS) (Wilson 2006).

The registration that occurred under NSEERS has been expanded via a program called US-VIST to most visitors to the US. A similar system in the EU, the Visa Information System (VIS) has been developed in the EU to capture and store information – including biometric information – from all visa applications to EU member states (Wilson 2006). The storage of this data and its linkage across databases will facilitate surveillance and monitoring on an unprecedented scale. The integration of biometric technologies into the international passport and visa system is then both a signification and realization of new forms of power. The technologizing of the border via biometrics betokens a renewed capacity of nation-states to police their boundaries. Technologized means of exerting control over movement form elements of “processes of statecraft” whereby the sovereignty of the state is enacted through processes of inclusion and expulsion. Such expressions of sovereignty have significant repercussions on the ground, as expanding databases facilitate new and powerful forms of cataloging, coding and filing individual identities. Increasingly too, databases are globalized through the incorporation of biometric identifiers in the international passport and visa system, an architecture forged by the US that some have suggested opens up the possibility of a global ID.

Post 9/11 questions of migration and mobility are increasingly interpreted through the prism of

security (Guild 2009). States of the global north have assessed the specter of uncontrolled migration as a threat to sovereignty. Within this rhetoric asylum seekers and refugees are increasingly cast as “folk devils” in moral panics fuelled by law and order politics (Wilson 2006). The demonization and criminalization of asylum seekers has been accompanied by coercive measures such as indefinite detention and forced deportation. In the nation states of the global north such coercive measures are elements of more sustained processes of criminalization whereby the act of seeking asylum is itself constructed as a “crime of arrival.”

Consequently it is perhaps unremarkable that biometric identification systems have initially been deployed on asylum seeker populations, where they serve as technological signifiers of the securitization of migration. Biometric identification systems involving fingerprinting those seeking asylum have become increasingly common and are in use in the UK, the Netherlands, and Australia (Woodward et al. 2003; Wilson 2006). The United Kingdom’s Home Office has adopted a biometric solution in the identification of asylum seekers within the UK. Asylum seekers are issued an Application Registration Card that carries a template of the bearer’s fingerprints, as well as their photograph, name, date of birth, and nationality (Home Office UK, 2002). The ARC is designed to facilitate rapid identification of asylum seekers following initial processing at ports of entry or at the Asylum Seekers Unit in Croydon. The objective of the card is to facilitate identification of asylum seekers by authorities. In so doing the ARC firmly inscribes and secures a “non-citizen” identity on individual asylum seekers. The system is designed not so much to facilitate access to services as to deny them, one stated purpose of the system being to counter fraud through the claiming of services under multiple identities (Woodward et al. 2003, p. 290.)

Similar schemes are also initiated in the EU, US, and Canada. The countries of the European Union have established EURODAC, an automated fingerprint identification system. In the Convention of Dublin, June 15, 1990, the member states of the European Union agreed that the

first country where the applicant arrives was to be responsible for their application. This was to preclude one country passing asylum seekers on to another, as well as asylum seekers submitting multiple applications in different member states (Van der Ploeg 1999, p. 298). EU ministers responsible for immigration established a Community wide system for the comparison of fingerprints of asylum applicants in 1991, while the agreement to build a central fingerprint database of asylum seekers was established in 1997 by the European Council. EURODAC was tested in 2002, and from January 15, 2003, asylum seekers fingerprints have been taken whenever they seek asylum, whether inside or outside the EU's borders. Fingerprints are then digitally transferred from member states to a central EURODAC unit for comparison against the existing database. Fingerprints of asylum seekers can be stored for up to 10 years, or immediately erased if an applicant is granted nationality in a member state. In addition to asylum seekers, EURODAC is also a biometric database of "persons who have crossed an external frontier of the Community in an irregular manner." These "foreign nationals" have their biometric data retained for 2 years or immediately erased if they receive a residence permit or leave the territory of the EU (Wilson 2006).

EURODAC was justified by the EU Council in terms of the need to accelerate decisions on asylum bids. Another powerful rationale behind the establishment EURODAC was a perceived need to stem "asylum shopping" across member states of the EU and separate those categorized as "legitimate" asylum seekers from other categories of migrant. Across nation-states of the global north biometric technology is being extensively deployed to demarcate and signify identities of "non-citizens." This process is intertwined with the wider securitization of migration as a political issue and the attendant discursive criminalization of migrant identities. International relations scholars have noted the significance of policing borders not only to preserve the integrity of the nation-state but as a marker and arbiter of state sovereignty overall. Increasingly the identity of the asylum seeker

has been configured as a site on which state sovereignty is enacted. The capacity to establish legitimacy, confirm identity, and expel those deemed "illegitimate" has thus been a pivotal "performance of sovereignty" (Pickering 2005).

The particular focus upon asylum seekers in biometric deployment is intertwined with the securitization of migration and the criminalization of persons seeking to move from the global south to the global north. The issuing of smart entitlement cards and the targeting of "illegal" migrants with biometric technologies serves to wend discourses of terrorism, organized crime, and migration as a single coherent threat to national sovereignty. The need for biometric data incorporated into travel documents is most often cited as "national security" – meaning security from "illegal" migrants and terrorists. However, in practice such documents inscribe on those seeking asylum the identity of "non-citizen." Fixing these "non-citizen" identities through biometric documentation and "entitlement" cards serves to heighten exclusion and reinforces the notion of migration as a problem of security.

Biometrics has become a pivotal technology in a range of security domains but most evidently in border control. Its ascendancy has been partially due to the expanding security market – both public and private – in the post 9/11 global north. Critical scholars, however, dispute the claims of the technical literature which frequently asserts the neutrality of the technology. It is argued that biometric databases are integral to processes of social sorting that distinguish between the eligible and ineligible, the included and the excluded, the banished and the admitted. Moreover biometric databases have deterritorialized the border, creating a situation in which the border is – quite literally – everywhere. Biometric technologies have also played an instrumental role in facilitating the enhanced mobility of a privileged elite from the global north through trusted traveler programs while impeding the movement of those from the global south through risk profiles and categorizations of dangerousness.

## Related Entries

- ▶ [Forced Migration and Human Rights](#)
- ▶ [Surveillance Technology and Policing](#)

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## Boot Camps

- ▶ [History of Boot Camps](#)

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## Border Control

- ▶ [Biometrics and Border Control Policing](#)

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## Brain

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## Breakdown

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## Break-In

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## Breaking and Entering

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## Bribery

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## British Crime Firms

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### Overview

Historically organized crime is a relatively new phenomenon in Britain that was only formally recognized by politicians and law enforcement in the 1980s and 1990s and emerged as a social problem that was heavily associated with transnationality (Hobbs 2013). However, there were precursors to this obsession with “transnational-organized crime,” which warrant attention, and they were very much home grown and embedded in the class relations and political economy of industrial society. The criminal firm emerged from the cultures of the urban working class as a form of localized organized crime that was central to the economies and cultures of traditional working class communities and were particularly prominent in London among those communities lacking the strict disciplines of industrial life.

### History

Working class London was made up of, “a social patchwork of intensively localist culture and sentiment” (Robson 1997, 7), that lacked the homogeneity of cultures created by a single mode of production (Hobbs 1988, 87). London’s economic base was diffuse, and as a consequence the capital’s proletariat evolved as a complex and highly individualistic amalgam of class specific identities gleaned from localities sharing little in common with their neighbors other than socioeconomic deprivation. Even dock work, upon which vast swathes of south and east London were reliant, created working cultures dependant upon semiautonomous groups of workers hired by the day before shifting to another cargo, possibly on another ship, maybe in a different dock (Hobbs 1988, 109–111). The localism of Londoners manifested itself in a tendency to regard territories beyond their own with deep suspicion, maintaining exposure to those residing in adjacent neighborhoods to a minimum.



The strictly defined territorial parameters of industrial working class communities produced clusters of youthful collaborations who utilized territorial identity as a vehicle for recreational transgression before morphing seamlessly into adult pursuits, and if we take some of the better known criminal brands of the mid-twentieth century, youthful conflict was certainly important in forming identities, creating reputations, and molding communal distinctiveness in the face of opposition. These territorially based groups occupied spaces or interstices between sections of the urban fabric and were frequently situated within “delinquency areas” where youthful deviant collaborations were organized around working class territorial imperatives defined by the experiences of low income, poor housing, and poor health. It is here where criminal careers are nurtured and where youth formulate criminal associations. Then as now neighborhood-based groups abounded in working class London, territorial imperatives featuring individual, local, and family reputations were forged in youthful combat that was ideal preparation for the world of acquisitive gangsterism, where fractious networks came to define much of what came to be regarded as organized crime in the twentieth-century London.

Throughout the industrial era generations of youths forged reputations in defense of their neighborhood, as groups of young men drifted into adjacent territory in order to provoke violence. However, these groups emanated from a domain that was shaped, refined, and restrained by elements of social control that were lodged in the pragmatic realities of the local political economy and its associated cultures and institutions. For most participants these were temporary collaborations before engagement with the local employment market-enabled maturation into an unambiguously proletarian society where crime was normal (Hobbs 2013). However, certain individuals, groups, and families on establishing a monopoly of informal violence would commodify this monopoly and via the finely grained differential between security and extortion, exploit businesses, and individuals within their home territory. While most groups stayed within the cultural and economic frameworks provided

by the industrial neighborhood, the most competent and ambitious sought out and colonized adjacent territories where the object was to create “protected enclaves” (Arlacchi 1986, 195), via the maintenance of a viable threat.

Examples of crime firms who succeeded in breaking out of the local neighborhood to occupy adjacent territories can be found in the three following cases.

### Three Crime Firms

After the First World War, there was a boom in horse racing and many who wished to gamble were drawn to the opportunities for lawful betting at racecourses. However, groups of men with violent reputations exploited the numerous extortionate opportunities available at the racecourses, and these coalitions of violent men are significant for their willingness to pit local reputations within a national arena. The Sabini family emerged as defenders of Clerkenwell’s “Little Italy,” resisting incursions from equally deprived areas of the capital, and they soon commodified their growing reputations by organizing a moderately lucrative extortion business. However, the racecourses offered the richest prize to any group who could transcend the restricted opportunities of the working class territory where their reputations were formed and to enable this transcendence the Sabinis formed alliances with Jewish bookmakers and criminals, as well as some significant figures in the police (Hill 1955, 3).

Eventually, against a backdrop of considerable violence, the Sabinis established something approaching a monopoly at most of the major racecourses in England, progressing into the affluent West End of London, and “Bottle parties, clubs, public houses, cafes, restaurants, even ordinary shops had to pay protection money to the Sabini extortionists” (Hill 1955, 5). However, further progress was halted by the outbreak of the Second World War and the interment of many of the “Italian Firm” and the Sabinis never fully recovered their power. The Sabinis were a powerful criminal group who transcended their immediate neighborhood, briefly succeeded in dominating a wide territory that included most major English racecourses, as well as the affluent west end of London, and as

a consequence Darby Sabini was “the nearest Britain got to an organising gangster” (Pearson 1973, 30. For further details of the Sabinis, see Hobbs 2013).

The Kray twins who emerged from the East London neighborhood of Bethnal Green during the post-Second World War era also utilized violent reputations forged in adolescence before commodifying this violence and extorting from local businesses. Changes in the British gambling laws opened up new opportunities in adjacent territories, and they were soon competing with neighborhood crime firms from across London for a portion of the lucrative West end market (Pearson 1973, 16–18, 27–28). Mental illness plagued the Kray firm, and delusional fantasies based upon the replication of Gangster scenarios with origins in Hollywood restricted their progress. Eventually reckless violence and murder made the Krays firm difficult to ignore, and by the end of the 1960s the police had imprisoned the entire firm, the twins making more money from nostalgia, bogus charity events, books, and a film than they ever did from crime (Hobbs 2013).

Charlie and Eddie Richardson were born into a traditional south London working class family, and like their East London counterparts the brothers endured a wartime childhood, enjoyed the vibrant streetlife of working class London and developed as talented young boxers and prominent street fighters. However, unlike the Krays, both Charlie and Eddie Richardson were hard workers and made good money from the postwar scrap metal trade. The Richardsons established an extortion business across a wide south London territory and moved into a number of disparate commercial areas, including wholesale chemists and mineral mining. The honey-pot of the West End brought them into limited conflict with the Krays and the Richardsons diversified into long firm fraud (Levi 1981, 76–77), gaming machines, pornography, scrap metal yards, a perlite mine in South Africa, and control over car parking at Heathrow Airport. The Richardson firm was eventually closed down by the police after a fatal shooting at a club, a bizarre “torture” trial and Charlie Richardson’s dalliance with the South African Secret service (Hobbs 2013).

These three examples indicate the manner in which the British crime firm emerged from working class neighborhoods with commercially viable violent reputations forged in youth. The foundation of the crime firm is extortion or “protection,” and the elite were able to apply their reputations to colonizing adjacent territories. However, the local working class neighborhood was the platform that formed the reputations upon which subsequent operations depended, and when this territory was obliterated, the neighborhood firm was forced to adapt.

Deindustrialization eroded the traditional working class milieu from which the traditional crime firm emerged, and the fragmentation of working class neighborhoods created arenas that have made it difficult for family-based crime firms to establish the kind of parochial dominance they once enjoyed in the 1950s and 1960s. The new arenas for criminal activity are entrepreneurially orientated and consist of “. . . flexible, adaptive networks that readily expand and contract to deal with the uncertainties of the criminal enterprise” (Potter 1994, 12), and as a consequence, the family firm has had to adapt (Hobbs 1997). Although we should not assume that this constitutes redundancy, Lambrianou reminds us, “Brothers were your strength” (1992, 29).

### Suburbs

The postindustrial drift of London’s traditional working class communities away from its urban heartlands was enabled by both public housing policy and the private housing market and resulted in the colonization of rural space, bloating the periphery with new towns and extending the suburbs with a rash of housing projects. Those involved in criminal enterprise were merely part of this migration, and the key to understanding their change of address rests not with their criminality, but with their status as part of a proletarian diaspora whose trajectories out of the working class city can encompass a wide range of possibilities. Yet the shift out of the old neighborhood is seldom total, for the restructuring of the old industrial neighborhood has created new opportunities for money making, and pubs, clubs, and gyms make good

investments that will always benefit from being associated with an old established brand (Hobbs 2013).

As geographical location becomes a somewhat ambiguous concept around which to base an illegal business, criminal labor has taken on increasingly transient, characteristics. The ever-mutating interlocking networks of opportunity created by the late modern city (Ruggiero and South 1997), in common with its legitimate counterpart, features interactions negotiated within networks of small flexible firms that are characterized by short-term contracts and lack of tenure, where the workforce can be "...hired/fired/offshored, depending upon market demand and labor costs" (Castells 1996, 272).

Understanding local housing policies is crucial to reaching an understanding of the distribution of various forms of delinquency, and the emergence of potent postindustrial forces that have "emptied out" marketable labor from communities formed around the assumptions of traditional cultures has relocated criminal coalitions within decentered, unpredictable, and relatively fragile economies. As a result of the sanctioning of the sale of two million homes in the UK, working class council tenants were able to buy their homes at a massive discount before selling at a profit and heading for London's periphery, which combined with deindustrialization, effectively drained working class London of much of its established human capital (Hobbs 2013). Municipal housing policy, along with the London's private housing market combined with deindustrialization to relocate criminal coalitions within decentered, unpredictable, relatively fragile economies, spread over a wide, and at times seemingly inappropriate, terrain. By the late 1970s the traditional neighborhood had been decimated by regeneration, and most of the traditional family firms had become at least partly ensconced within London's periphery, establishing new business ventures, and in particular engaging with the drugs trade (Hobbs 2013).

However, deindustrialization is not a homogenous process, and in an examination of the serious crime community in another part of

Britain, housing policy deliberately retained traditional neighborhood structures, and as a consequence key aspects of the locales cultural inheritance such as the neighborhood family firm, along with the cultural territory that spawned them, remained relatively intact. These firms have of course adapted to the new market place, occasionally expanding beyond the old neighborhood, while striving to retain the traditional order through traditional means (Hobbs 2001).

## Discussion

Within the new serious crime community, relations between individuals vary according to demographic dispersion, familial composition, ethnic distribution and integration, commercial practice, trading routes and patterns, the economic backcloth of the legitimate culture, and the particular use of space (Soja 1989). As a consequence serious crime networks have been extended across time and space, its members residing upon an anonymous terrain that is apparently indistinguishable from that of the legitimate economic sphere. Yet these networks stand in stark contrast to their predecessors, particularly with regard to their dynamism, and the extent to which they impact globally via their ability to both exploit and undercut traditional cultures. This ambiguity that is located within the new family firm is highly instrumental and typified by "vertically disintegrated networks of small firms engaged in transaction rich linkages of market exchanges" (Lash and Urry 1994, 23). The family firm is historically and cognitively positioned among a habitus incorporating multiple chains of legitimate and illegitimate opportunity networks to exploit these linkages to the full. The scope and extent of their activity depends upon the degree of connectivity established between groups and individuals, and it is this connectedness rather than corporate identity that forms the structural connotation inherent in "organized crime." The at times confusing list of the family firm's contemporary activities, especially compared to the one dimensional nature of their forefather's criminal clout, is indicative of the families'

ability to establish interactions that consist of infinite mutations that exploit geographic space without being confined to territorial imperatives.

The same mechanisms that contrive in the destruction of traditional communities are also liable for the creation of new forms of locality and identity, and the neighborhood firm is essentially a constantly evolving social system (Ianni 1971, 35), whose strength and longevity is derived from its continued identification with territory that retains a deep and enduring well of historical sentiment. For even when the material base for such a community is removed, and crime is located within loose collectivities of ad hoc groupings, the family firm survives as a functional touchstones of competence and honor (Hobbs 1997).

The sense of “retrospective unity” (Bauman 1992, 138) that is exploited by the family firm is reliant upon a generalized recipe of locality (Robertson 1995, 26) that enables a highly durable system of transposable dispositions, from which emerge practices that reproduce “the objective structures of which they are the product” (Bourdieu 1977, 72). The flexibility of contemporary serious crime collaborations, licenses engagement with new markets, and particularly when they are at least part populated by powerful individuals and proven practices from previous eras, they become somewhat more difficult to locate and pigeonhole than their predecessors. For while they may be steeped in traditional criminal cultures established and maintained by the precedents of indigenous markets, the contemporary criminal firm is not restrained by the parameters of specific neighborhoods, for they inhabit a universe that prioritizes the ability to perform successfully within a local class milieu that has not disappeared, but realigned according to the dictates of global markets.

Criminal career trajectories are no longer restricted to highly specific and essentially redundant geographic and cultural spaces within an urban “underworld” but are located “. . .all over the main streets and back alleys of the global economy” (Castells 1996, 168). The result is the creation of criminal firms typified by flexibility and unpredictability, operating within multilayered,

networks of opportunity, “small, fragmented, and ephemeral enterprises (which) tend to populate illegal markets-not large corporate syndicates” (Potter 1994, 13). The illegitimate economic sphere now features interlocking networks of small flexible firms, which like all aspects of contemporary capitalism, is typified by versatility, and a degree of flexibility that were inconceivable during the industrial era (Lash and Urry 1987). While this is contrary to the popular notion of transnational crime corporations (Williams 1993), as Robertson (1992, 1995) has indicated, globalization has improved the viability of locality as a generator of a discrete social order. Indeed the dialectic between the local and the global brings to the fore markets where alliances between global and local spaces created enacted environments where “the methodologies for the integration of organised criminals into civil society are established” (Block 1991, 15).

This brings the family firm back into the spotlight, for by perpetually realigning local precedents in the context of global markets, some kind of continuity and long-term viability can be maintained (Hobbs 1995, Ch. 5). Globalization should not be allowed to override the particular (Ferguson 1992), for the result, as we see from any critique of transnational organized crime (Hobbs 2013), is an a-historical theory built upon a rigidly structured view of economic life drained of cultural resonance. Indeed such a concept could not possibly reproduce faithfully the experiences of the family firm, whose enacted environment is a blend of the local and the global, constituting a highly effective vehicle that enable both individuals and groups to move between these two interlocking spheres. For criminal career trajectories are no longer restricted to highly specific and essentially redundant geographic and cultural spaces within an urban “underworld” but are located “. . .all over the main streets and back alleys of the global economy” (Castells 1996, 168).

Serious crime should be understood in terms of interlocking networks which are metaphors for relationally and manifested as amalgams of family, neighborhood, region, and nationality. Indeed, kinship in itself should be regarded as a highly instrumental trust variable, assuring

loyalty by appealing to something other than self-interest (Lupsha 1986, 34). This is particularly relevant to the family firms continued use of violence, which remains a tactic of the increasingly blurred personal and commercial domain, and serves to stress the importance of trust for, “The everyday presence of violence prevents personal and effectively neutral trust relationships. Where violence is paramount, interpersonal ties must necessarily be strong, intense and affectively connoted” (Catanzaro 1994, 273). The continued use of violence to create, protect, and maintain a slice of the market within a densely populated sector inhabited by a multiplicity of networked interfaces (Arlacchi 1986, 195) is an enduring characteristic of the serious crime market place (Arlacchi 1998, 205).

## Conclusion

Criminals do not experience the world globally or transnationally, for these are essentially fields devoid of interpersonal relations, and although it has undergone major configurations and relocations during post-industrialism, the firm is far from obsolete. The firm operates both in the “inherited basic architecture” (Castells 1996, 146) of the industrial neighborhood, in their new suburban idyll, and across regional, national, and international boundaries (Hobbs 2013), constituting the embodiment of Rose’s belief that the individual, “can within the limits permitted by the culture define for himself somewhat new patterns suggested by the variation among the old ones” (1962, 14).

## Related Entries

- ▶ [Careers in Organized Crime](#)
- ▶ [Organized Crime](#)

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## British Crime Survey

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### Synonyms

[British Crime Survey](#); [BCS](#)

### Overview

The Crime Survey for England and Wales (CSEW), until 1 April 2012 known as the British Crime Survey (BCS), is a victimization survey of the population resident in households in England and Wales. The primary motive for launching the survey, over 30 years ago, was to assess how much crime went unreported in official police records. Today the survey has a high profile and has become a key social indicator charting trends in crime experienced by the general population. Its quarterly results receive considerable media attention, and politicians debate the implications of its findings.

However, from its inception, the survey was not designed to be merely a social indicator. One of its strengths has been that it has provided a rich source for criminological research and for informing policy development. Analysis of the survey has been instrumental in shedding more light on the nature and circumstances of victimization. The survey has not stood still and has continued to evolve and develop its methodology and content to respond to emerging issues.

The survey was first commissioned by the UK Home Office (the Government department responsible for crime and policing), but responsibility for it has recently transferred to the

central Office for National Statistics. This move raises questions about the future role of the survey and whether it can continue to effectively balance its role as a key social indicator on the one hand with a continuing role as an invaluable research tool on the other.

### Origins

The Home Office, the Government department responsible for crime and policing in England and Wales, started collecting statistics on crimes recorded by the police over 100 years ago. The numbers of crimes recorded by the police grew inexorably from less than 100,000 crimes per year at the turn of the twentieth century to half a million in the 1950s, a million in the 1960s, and two million in the 1970s. By 1981, over three million crimes a year were recorded by the police. Many criminologists were skeptical that this scale of increase represented a real rise of such magnitude in crime.

The first attempts to derive alternative measures of crime, based on sample surveys of the general population, started to develop in the United States (US) in the late 1960s. The first surveys of this kind were carried out for the US President's Commission on Crime which in turn led to the establishment of the National Crime Survey (NCS) program and subsequently the National Crime and Victimization Survey (NCVS).

This and the development of small area victimization surveys in the UK inspired analysts working in the Home Office to press for a national victimization survey to be developed. The discussions around the case for such a survey within the Home Office has been outlined by some of those closely involved in the decision back in the late 1970s and early 1980s (Hough et al. 2007). A strong part of the case for the creation of the BCS, as it later became known, was to yield an assessment of what was referred to at the time as the “dark figure” of crime, that is, crimes which escaped official police records. Indeed the first published report of the survey's findings refers to one of its main aims being to provide an “index of crime as a complement

to the figures of (police) recorded offences” (Hough and Mayhew 1983).

The decision to commission a national survey of crime in England and Wales was taken by the Home Office in mid-1981, and the Scottish Home and Health Department (the Government department responsible for crime and policing in Scotland, at the time) decided to fund an extension to cover Scotland shortly thereafter. A contract for data collection was awarded to an independent survey organization, Social and Community Planning Research (SCPR) which has subsequently become the National Centre for Social Research (NCSR).

However, from its beginnings, the survey was conceived as being more than merely an instrument for counting crime. The survey was seen as providing a rich source of data about the characteristics of victims of crime, the nature, and consequences of victimization experiences. This contrasted with the police-recorded statistics which yielded little more than aggregate counts of offences by area. In addition, the survey was able to include questions on public attitudes to crime and crime-related issues, and again, this provided a rich new vehicle for criminological research.

## Methodology

An annual technical report covering the survey methodology is produced by the survey contractor each year, and the latest version, at the time of writing, covered the 2010/2011 survey year (Fitzpatrik and Grant 2011). Below, a brief summary of the key aspects of methodology and how it has developed over time can be found.

## Population Coverage, Sampling, and Weighting

The BCS was conceived as a survey of the population resident in households and, as such, was never intended to capture the victimization experiences of other groups (e.g., those permanently resident in institutions) or organizations

(e.g., commercial victims). The survey was designed to yield results for a nationally representative sample of the adult population (defined as those aged 16 years and over). In more recent years, the sample has been extended to cover the experiences of children aged 10–15 years (see below).

While the survey covered the whole of Britain in its early years, it soon became restricted in its geographical coverage to just England and Wales. Thus, for most of its history, the BCS was something of a misnomer, and following the transfer of responsibility for the survey from the Home Office to the Office for National Statistics (see below), the survey was renamed as the *Crime Survey for England and Wales* on 1 April 2012 to better reflect its geographical coverage.

Since the first survey in 1982, the CSEW has randomly selected one adult per household sampled to take part in the survey. The sampling frame used to draw the original sample of households/adults has evolved over time from the electoral register (a record of those adults entitled to vote) for the first three rounds of the survey to the small-user Postcode Address File (a record of residential addresses maintained by the Royal Mail) ever since. The sample design has been subject to a number of modifications with high-crime areas over-sampled in the early years when the annual sample size typically ranged between 10,000 and 15,000 adults. The 2000 BCS was the only survey to adopt a fully proportional sample (i.e., with every area selected with probability proportional to size).

Following the expansion of the sample size thereafter, and the need for the survey to yield a number of key estimates at police force area level, the survey has moved again to a disproportionate sampling but this time with less populous (and thus lower crime areas) over-sampled. The sample design has been refined in recent years to move to a partially clustered sample design involving an unclustered sample of addresses being drawn in the most densely populated areas, with more clustered designs in the medium population density and low population density areas.

Throughout the history of the survey, appropriate weighting systems have been developed to

adjust for the different selection probabilities involved in the respective designs. An independent review was commissioned by the Home Office in 2009 to examine the impact of the changes in sample design on the reliability of BCS crime trend estimates (Tipping et al. 2010). This showed that no bias had been introduced to the survey from changes in the sample design and that all designs examined had generated estimates of victimization with low levels of variance. The authors concluded that changes in the sample design had not affected the ability of the survey to identify trends in victimization reliably.

### Crime Reference Period and Victimization Measures

The data collection period for the first BCS took place in the first few months of 1982 and asked respondents about incidents that had happened since 1 January 1981. For the purpose of analysis and reporting, all incidents occurring in 1982 were excluded so that respondents had a common crime reference period of the 1981 calendar year. A change to the crime reference period was required with the move to a continuous survey, with data collection taking place throughout the year, from 2001/02. The survey then moved to asking respondents about crimes that had been experienced in the 12 months prior to interview. This resulted in the development of a rolling reference period with, for example respondents interviewed in January asked about crimes experienced from the previous January to December, those interviewed in February asked about crimes experienced between the previous February and January of the year of interview, and so on. Respondents were additionally asked for information on the month in which an incident took place or, if they could not recall the exact month, the quarter. This allows analysts to retrospectively splice data from multiple years to construct crime rates on the basis of calendar years if they should wish to do so (see (Tipping et al. 2010)).

Since the survey began, the basic approach to obtaining information on victimization experiences

has not changed. Respondents are asked a series of screener questions designed to ensure that all incidents of crime within the scope of the survey, including relatively minor ones, are mentioned. The screener questions deliberately avoid using legal terms such as “burglary,” “robbery,” or “assault,” all of which have a precise definition that many respondents will not know. The wording of these questions has been kept consistent since the survey began to ensure comparability across years.

Depending upon individual circumstances, a maximum of 25 screener questions are asked covering:

- Vehicle-related crimes (e.g., theft of vehicle, theft from vehicle, damage to vehicle, bicycle theft)
- Property-related crimes (e.g., whether anything was stolen, whether the property was broken into, whether any property was damaged)
- Experience of personal crimes (e.g., whether any personal property was stolen, whether any personal property was damaged, whether they had been a victim of force or violence or threats)

All vehicle-related and property-related crimes are considered to be *household* incidents, and respondents are asked about whether anyone currently residing in their household has experienced any incidents within the reference period. For respondents who have moved within the last 12 months, questions on household crimes are asked both in relation to the property they are now living in as well as other places they have lived in the last 12 months. *Personal* incidents refer to all crimes against the individual and only relate to things that have happened to the respondent personally, but not to other people in the household. Weights are created to allow analysis at either household or personal level.

All incidents identified at the screener questions are then followed through in a series of detailed questions. The first three victimization modules include detailed questions relating to each incident; the last three victim modules are shorter modules, designed to be much quicker to complete to avoid respondent fatigue during the interview. The order in which the victim modules



are asked depends on the type of crime – less common crimes are prioritized in order to collect as much detailed information as possible. A total of up to six victimization modules can be completed by each respondent.

Most incidents reported represent one-off crimes or single incidents. However, in a minority of cases, a respondent may have been victimized a number of times in succession. At each screener question where a respondent reported an incident, they are asked how many incidents of the given type had occurred during the reference period. If more than one incident had been reported, the respondent was asked whether they thought that these incidents represented a “series” or not. A series is defined as “the same thing, done under the same circumstances and probably by the same people.”

Where this was the case, only one set of detailed victimization questions are asked in relation to the most recent incident in the series. There are two practical advantages to this approach of only asking about the most recent incident where a series of similar incidents has occurred. First, since some (although not all) incidents classified as a series can be petty or minor incidents (e.g., vandalism), it avoids the need to ask the same questions to a respondent several times over and thus reducing respondent burden. Secondly, it avoids “using up” the limit of six sets of detailed victimization questions on incidents which may be less serious.

In subsequent analysis and reporting, the convention has been for single incidents to be counted once and *series* incidents to be given a score equal to the number of incidents in the series occurring in the reference period, with an arbitrary top limit of five. This procedure was introduced in order to ensure that the survey estimates are not affected by a very small number of respondents who report an extremely high number of incidents and which are highly variable between survey years. The inclusion of such victims could undermine the ability to measure trends consistently. This sort of capping is consistent with other surveys of crime and other topics. However, the decision to cap series incidents at five has led to some criticism with it

being claimed that this has served to mask the extent of chronic victimization and harms experienced by the most frequently victimized (Farrell and Pease 2007).

The first BCS developed an Offence Coding System to enable incidents reported by respondents to be assigned a criminal offence code (e.g., burglary or robbery) that approximated to the way in which incidents were classified by the police. This offence coding process takes place outside of the interview itself using a team of specially trained coders who determine whether what has been reported represents a crime or not and, if so, what offence code should be assigned to it. Apart from some minor changes, the code frame and the instructions to coders for the core survey have remained stable since the first survey.

## Mode of Interview

The 1982 BCS was conducted in respondent’s homes with trained interviewers collecting data via a paper-and-pencil-administered interviewing (i.e., interviewers filled in paper questionnaires by hand with extensive post-interview data keying and editing process). In 1994, the BCS moved to computer-assisted personal interviewing (CAPI) which brought improvements to data quality as it was possible to automatically route respondents through the questionnaire, without relying on interviewers following written instructions, and to incorporate logic and consistency checks on data entered in different parts of the questionnaire. CAPI also allows date calculations and text substitutions which help the interviewer ensure the interview flows smoothly.

The move to laptop computers provided further opportunities for innovation with self-completion modules introduced to cover sensitive topics. The use of self-completion on laptops allows respondents to feel more at ease when answering questions on sensitive topics due to increased confidence in the privacy and confidentiality of the survey.

Self-completion modules were first included in the 1996 BCS to obtain improved estimates of

domestic violence (Walby and Allen 2004), and a similar module has been included since the 2004/2005 survey. A paper self-completion module on illicit drug use was included in the 1994 BCS though a change in the way in which these questions were asked when it was reintroduced with CASI means that comparable figures are only available from 1996. A separate annual report on the findings from the drugs self-completion continues to be published by the Home Office with the latest one at the time of writing relating to the 2011/2012 survey year (Home 2012a).

The self-completion modules are restricted to those respondents aged 16–59 years (the decision to exclude those aged 60 and over was an economy measure). In the 2008/2009 survey, a 6-month trial was conducted to examine the feasibility of raising the age limit to 69, but this proved unsuccessful (Bolling et al. 2009).

### Regularity of Survey Fieldwork

Following the first BCS in 1982, a second survey took place in 1984 with fieldwork taking place early that year and with the preceding calendar year (1983) acting as the reference period. Subsequent surveys were repeated on the same basis in 1988, 1992, 1994, 1996, 1998, 2000, and 2001.

In the late 1990s, the value of the survey for policy purposes was recognized by the Home Office which planned to move the survey onto an annual cycle and to increase substantially its sample size. These moves were designed to as a means of increasing the frequency with which survey-based estimates could be published, while the increase in sample size was motivated by a desire to increase the precision of certain estimates. The latter was related, in part, for the need to use the survey to provide key performance indicators to assess the performance of the police.

The Home Office commissioned an independent review by leading experts in survey methodology and this reported in 2000 (Lynn and Elliot 2000). They recommended a number of major changes to the survey including:

- A move to a continuous fieldwork with the crime reference period being the 12 months ending with the most recent completed calendar month
- Expansion of the sample to obtain a minimum achieved sample of 600 or 700 interviews per year in each police force area
- Introduction of nonresponse weighting to incorporate both sample weighting (which was already being done) and calibration to population totals (i.e., to correct for potential additional nonresponse bias).

These recommendations were accepted, and the change took place with the 2001/2002 survey. There being 43 territorial police forces in England and Wales, this required a large increase in the annual sample size of the survey from around 20,000 in 2000 to around 33,000 in the 2001/2002 survey. Over the next few years, further demands for the BCS to provide key performance indicators led to further boosts to the annual sample size, which increased to over 36,000 in 2002/2003, some 38,000 in 2003/2004, and over 45,000 by 2004/2005.

More recently, it has been announced that due to cuts in government funding, the sample size of the survey will reduce with the 2012/2013 survey cut back to a sample of around 35,000 per year (Home 2012b). Nevertheless, it is a sign of the importance of the survey and the value in which it is held that in a period when other surveys have been stopped, the BCS continues to run with a sample some three times larger than the first survey in 1982.

### Extension of Survey to Children

The survey was restricted to the experiences of adults except for a one-off exercise in 1992 when a separate sample of children aged 12–15 were interviewed (Aye Maung 1995). This previous exercise did not attempt to replicate the methodology of the adult survey or to combine estimates from the adult and child surveys.

Following recommendations in two related reviews of crime statistics (Smith 2006; Statistics Commission 2006), the BCS was extended to children aged 10–15 from January 2009.

The Home Office commissioned methodological advice on the feasibility of extending the survey to children (Pickering and Smith 2008), and following an extensive period of development and testing work during 2008, live data collection started in January 2009.

Children aged 10–15 are interviewed in households that have taken part in the main survey; where an eligible child is identified (according to age), one is selected at random to take part. Extending the survey to encompass children's experience of crimes raised some difficult issues with regard to classifying criminal incidents; e.g., minor incidents that are normal within the context of childhood behavior and development can be categorized as criminal when existing legal definitions of offences are applied. Four different methods for counting crime against children were examined and subject to user consultation (Millard and Flatley 2010). Following consultation, two main measures were adopted. The first, called the "broad measure," is one in which all incidents that are in law a crime are counted. This will include minor offences between children and family members that would not normally be treated as criminal matters. The second, referred to as a "preferred measure," is a more focused method which takes into account factors identified as important in determining the severity of an incident (as judged by focus groups with children).

Methodological differences between the adult and children's survey mean that direct comparisons cannot be made between the adult and child victimization data, although these estimates are now presented in the published quarterly crime statistics (Office for National Statistics 2012) to provide a better understanding of victimization experiences among adults and children resident in households.

## Methodological Limitations

The CSEW is viewed as a gold-standard survey of its kind in terms of its methodology and response rate (the survey has continued to obtain a response rate of 75 % during the last decade when other voluntary household surveys in the UK have experienced falling response rates). However, as with

other sample surveys, there are a number of inherent methodological limitations, some of which have already been touched on above.

The most obvious of these relate to sampling error and the inherent imprecision around survey estimates. There are other sources of survey error, such as related to respondents' ability to recall events and report them to the interviewer accurately. Some incidents may be forgotten or events beyond the reference period brought into scope. Respondents may be embarrassed or unwilling to disclose some information to interviewers. Questions may be misinterpreted by respondent, and interviewers themselves may make mistakes in recording information given to them, and coders may make errors of interpretation when assigning incidents to offence codes. The survey contractors go to great lengths to minimize these errors through careful training of interviewers, testing of questions, and quality assurance of all aspects of the survey process.

## The Influence of the Survey on Criminological Thinking

The CSEW is now part of the UK National Statistics system with results from the survey reported on a quarterly basis alongside the police-recorded crime figures to provide a complementary and more comprehensive account of crime in England and Wales (Office for National Statistics 2012). The survey charted a rise in the volume of crimes covered by the survey through the 1980s reaching a peak in the mid-1990s. In line with the experience of many other industrialized economies, the survey described a fall in crime over the next 10–15 years with a generally stable trend in more recent years. However, the survey has had wider influence on criminological thinking, and it is this which is touched on below.

## Victimization Risks Including Repeat and Multiple Victimization

The first BCS report highlighted the relative rarity of serious criminal victimization but also the fact that a small segment of the general

population was particularly prone to falling victim (Hough and Mayhew 1983). At the time, the fact that it was younger adults, rather than the elderly, who were more likely to be victims of crime was a striking finding.

More detailed analysis of the dimensions of risk followed (Gottfredson 1984) including area-based analysis. For example, secondary analysis of the 1982 BCS revealed significant differences between high- and low-crime areas (Trickett et al. 1992). This showed a strong relationship such that the number of victimizations per victim rose markedly as the area crime rate increased. Further analysis showed similar patterns during the 1980s with a small number of areas hosting a disproportionate amount of crime (Hope and Hough, 1988). Further work examining the extent of repeat and multiple victimization includes one study of the BCS showing that 70 % of all incidents were reported by just 14 % of respondents who were multiple victims (Farrell and Pease 1993).

Such studies were influential in suggesting that a large proportion of all crime might be prevented if repeat or multiple victimization could be reduced and that crime prevention policy should focus on reducing the repeat victimization experienced by the most vulnerable people and in the most vulnerable places.

## Sexual and Domestic Violence

The BCS has been groundbreaking in its approach to the measurement of sexual and domestic violence. A self-completion module on domestic violence was included in the 1996 BCS (Mirrlees-Black 1999) and on sexual victimization in both the 1998 and 2000 surveys. The 2001 BCS included a more detailed self-completion questionnaire on both these topics. It was designed to yield national estimates of the extent and nature of domestic violence, sexual assault, and stalking including the first ever such estimates of sexual assault against men (Walby and Allen 2004).

This showed that interpersonal violence affected around one-third of the population at some time in their lives with women suffering

higher levels of victimization than men. It also demonstrated that such victims suffered high levels of repeat victimization, in particular of domestic violence. While these findings were not surprising to experts in the field, they quantified a phenomenon which helped to challenge others to seek to tackle these forms of violence.

## Fear of Crime and Perceptions of Crime and Antisocial Behavior

Fear of crime has been a topic included in the survey from its very beginnings. It is a concept which is complex and difficult to measure. Over the years, the survey has deployed a range of questions, and researchers have sought to explain the key drivers and relationships (see, e.g., Allen 2006). Other researchers have used BCS questions to explore the frequency and intensity of fear of crime (Farrall and Gadd 2004). It has been suggested that few people experience specific events of worry on a frequent basis and that “worry about crime” is often best seen as a diffuse anxiety about risk, rather than any pattern of everyday concerns over personal safety (Gray et al. 2011).

The survey has also been used to describe two types of “perception gap”: one related to differences between what is happening to crime nationally and in the local area and, the second, the difference between perceptions of crime and actual crime levels. New questions added to the 2008/2009 survey revealed that the perception gap between changes nationally and in the local area were greater for the more serious violent (and therefore rarer) crimes and smaller for acquisitive crimes suggesting personal experience was more likely to play a part in the perceptions of the more common crimes while perceptions of rarer crime types are likely to be influenced by media reporting. In addition, analysis of small area police-recorded crime data showed a clear linear relationship between actual levels of crime and perceptions of the comparative level of crime in the local area (Murphy and Flatley 2009).

Antisocial behavior has become a major focus for government policy and practitioners since the

late 1980s. Questions were added to the 1992 BCS to ask people about their perceptions of antisocial behavior in their area, and these have been revised and expanded over time to include personal experiences as well as perceptions and what such perceptions were based on (see, e.g., Upson 2006).

### **Public Attitudes to the Police and Criminal Justice System**

The coverage of policing issues has expanded in the survey over time with specific modules of questions being included on contact with the police and public attitudes to the police (see, e.g., Skogan 1994). Analysis of the experience of ethnic minorities with the police has also been a focus of BCS analysis (see, e.g., Clancy et al. 2001). In more recent years, the focus on neighborhood policing and on police performance has led to questions being more routinely included on police visibility and public attitudes towards the police (see, e.g., Allen et al. 2006; Moon and Flatley 2011).

The BCS included questions on public attitudes to sentencing in the 1982 and in a number of subsequent rounds of the survey which has made an important contribution to the understanding of such issues. The 1996 BCS included a range of specific questions on attitudes to punishment and revealed a rather jaundiced view of sentencers and sentencing thinking them to be too lenient (Hough and Roberts 1998). This analysis showed that public disaffection was partly a result of ignorance of judicial practice and, ironically, when people were asked to prescribe sentences for actual cases, their sentencing tended to be in line with current sentencing practice.

### **New Types of Crime**

Throughout its life course, the survey has sought to adapt to emerging issues, and below are some examples of how the survey has evolved to meet changing information needs.

Following the Stephen Lawrence inquiry in 1999, the survey included questions on racially

motivated crimes, and in recent years, the module of questions has been expanded to ask victims of crime if they thought the crime had been religiously motivated. Other strands of “hate crime” have also been added to the survey more recently (see, Lader 2012).

Responding to changes in technology, a mobile phone theft module was added to the 2001/2002 survey to examine levels of such thefts. Subsequent analysis has explored the extent of mobile phone theft which showed the increased risk of such victimization among children and young adults (Hoare 2007).

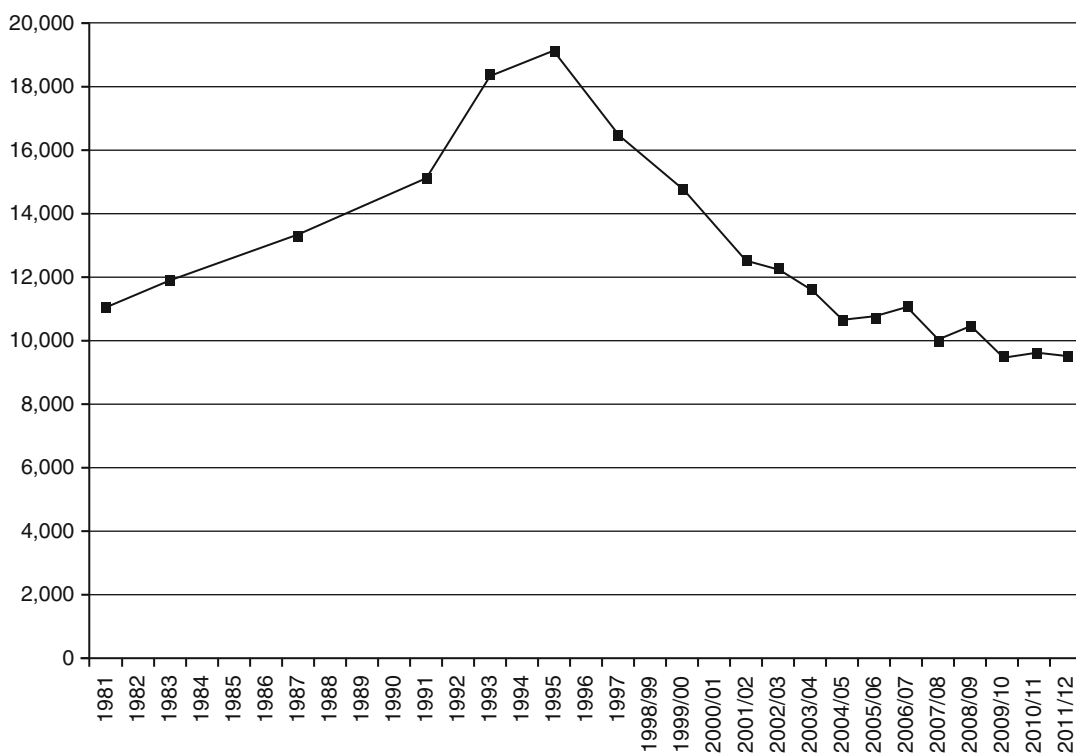
Similarly, a module covering fraud and technology crimes was first introduced in the 2002/2003 BCS. This covered the extent to which people had been victims of debit and credit card fraud, their computers had been infected with viruses or hacked into, or they had been sent harassing emails. An Identity Theft module was introduced to the BCS in 2005/2006 (Hoare and Wood 2007).

### **Future Directions**

As has been described above, responsibility for the CSEW has recently transferred to the Office for National Statistics. In a piece written to mark the 25th anniversary of the birth of the BCS, the founders of the survey described the tensions within the Home Office between the researchers (who promoted the survey) and the statisticians (who were more skeptical of its value).

As shown in Fig. 1, the survey has charted the rise in crime from the early 1980s through to the mid-1990s and the subsequent crime drop that has also been seen across other developed economies. As the survey has become institutionalised as a key social statistic in the UK, responsibility for it has passed from the researchers to the statisticians (first, following a structural reorganization in the Home Office in April 2008 and more recently with the move to ONS). Perhaps inevitably this has resulted in a subtle shift in priorities. However, up to now the survey has managed to combine its social indicator and research tool functions.

Number of offences (000s)



**British Crime Survey, Fig. 1** Trends in crime estimated from the Crime Survey for England and Wales

One of the key challenges for the ONS going forward is to ensure the continuation of both these functions to ensure the rich legacy of the survey as key resource for criminological enquiry continues.

## Related Entries

- ▶ [History of the Dutch Crime Victimization Survey\(s\)](#)
- ▶ [International Crime Victimization Survey](#)
- ▶ [National Victimization Surveys](#)
- ▶ [US National Crime Victimization Survey](#)

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## British Police

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### Overview

The development of policing in Britain prior to 1918 can be loosely divided into three phases.

From the early modern period until around 1850, the “old” police, a system of amateur or semiprofessional parish constables and night watchmen, were involved in the enforcement of laws and social norms. They shared this duty with a broad range of privately paid individuals and community groups, but, from c.1750 onwards, the efficacy of these localized and (relatively) informal mechanisms of policing was increasingly called into question. A variety of new initiatives were trialled, and, following on from the establishment of the Metropolitan Police in London in 1829, the so-called “new” police forces of the nineteenth century – uniformed, salaried, and preventive – were developed. These new forces did not initially mark a distinctive break with past practices and personnel, and there was a protracted period of overlap and reform. By about 1870, however, all administrative areas of Britain had instigated new, more “professional” institutions of policing. During the course of the nineteenth century, these new forces developed increasingly sophisticated policing techniques. Yet, while popularly depicted as a “golden age,” policing in the later nineteenth and early twentieth century was typified as much by the persistence of police violence, scandal, and discontent as it was by the spread of new standards of order and control. In addition, regional variations across Britain further complicate any simplistic depiction of gradual and consensual reform.

## **Policing Before the “New Police”**

### **Historical Antecedents**

The presence of a uniformed and salaried police service is now so woven into the fabric of daily life that it is easy to forget that this is an institution of recent (in historical terms) advent. In Britain, the role of the central state in everyday life was relatively marginal prior to the nineteenth century, and the role of the individual and the local community in crime control, prosecution, and punishment was correspondingly greater. Indeed, the term “police” was not much used in Britain before 1800 and, even when in use, implied a much broader set of activities than

just the prevention of crime and the detection of criminals (Dodsworth 2008).

This does not, however, mean that there was no “policing.” During the early modern period, official policing duties in Britain were carried out by parish constables and urban watchmen. Under legislation dating primarily from the thirteenth century, constables were appointed locally, usually for no more than a year, and were charged with maintaining the King’s peace in the district and reporting felons, miscreants, and nuisances to the local court. The efficacy of these parish constables was variable. There are some well-documented claims of negligence and inefficiency in apprehending offenders but there is also evidence that some served several terms of office, thereby gaining valuable expertise and authority. However, parish constables were not obliged to do anything which would take them beyond the boundaries of the jurisdiction they served, and there was no expectation that they would investigate all offenses which occurred in their locality (although they were expected to search premises or make arrests in instances where a magistrate’s warrant was issued). Watchmen were recruited and funded locally to act as a deterrent to theft, usually in urban areas. They walked established beats at set times (usually at night), checking that doors and windows were locked. Watchmen made occasional arrests if they chanced across offenders, but were also not usually expected to seek out or track offenders after an offense had been committed.

In addition to parish constables and watchmen, there were a range of other, private arrangements made to safeguard property. Game keepers, private armed guards on mail coaches, individuals paid to watch barns and haystacks, and toll-gate keepers all had a role to play in the mixed economy of regulatory activity, and a significant amount of court cases resulted from apprehensions under such arrangements (King 2000, p. 63). In addition to these private policing initiatives, the role of the individual (whether as prosecuting victim or as helpful friend or neighbor) was crucial in early criminal justice processes. Individuals were expected to press (and pay for) charges, if the identity of the offender



was known, and would often investigate crimes themselves or offer rewards for the recovery of stolen property.

Activities which would now be termed policing were thus carried out via a mixed regulatory economy, a rudimentary patchwork composed of limited state involvement, private initiative, business and community sanctions, and above all local enforcement of both legislation and social norms. Despite some tensions between the demands of magistrates and the norms of local communities, parish constables and watchmen maintained a broadly effective system of policing up until the end of the seventeenth century (Kent 1986).

### The Bow Street Runners

From the 1690s onwards, successive governments attempted to encourage the apprehension of offenders (particularly highwaymen, burglars, and forgers) by expanding the system of rewards offered for successful prosecutions. However, as well as encouraging victims to prosecute, these incentives also served to multiply the number of private, entrepreneurial “thief-takers,” many of whom were involved in corrupt practices such as encouraging (or even facilitating) robberies in order to claim the reward for subsequent arrests. With the bill for reward payments rising, the novelist and Bow Street magistrate Henry Fielding was granted a financial subvention in 1749 to enable him to establish a more organized body of men to confront violent offenders on the streets and highways around London. After Henry Fielding’s death in 1754, this group was developed over subsequent decades by his blind half-brother John Fielding, one of the most innovative magistrates of the eighteenth century, into the Bow Street Runners. Sir John shaped these individuals into a well-known and stable group of officers with recognized expertise in investigating crimes, tracking and arresting offenders, and presenting evidence in court. While the men had no official title, because their role had no official standing, they were an innovation in policing in being both proactive in seeking out offenders (prompted either by orders from

a magistrate or by a fee paid by the victim of a crime) and in gaining a degree of proficiency and continuity of service hitherto unmatched.

As part of their working practices, the Bow Street officers developed one of the first enduring systems of record-keeping relating to criminals and a range of rudimentary forensic techniques (e.g., ballistic and medical analyses). Thus, the “runners” can be thought of as “the first detectives,” although the word itself was not used until the nineteenth century (Beattie 2012, p. 2). Indeed, some “principal officers” (a term they employed to differentiate themselves from the more junior patrolmen of the Bow Street magistrate’s office) became highly sought-after professional investigators. John Townsend, for example, who had previously worked as a street vendor, gained such notoriety after a string of detective successes that he developed a close friendship with the Prince Regent and remained in popular demand among those who could afford his services.

The work of the principal officers was not, moreover, confined to London. Unlike parish constables, they were not bound to operate in any particular jurisdiction and, from the 1780s onwards, Bow Street officers were increasingly engaged by employers across the country, to the extent that they might be considered in some ways a precursor to a national police force (Cox 2010). The provincial magistracy, in particular, often required Bow Street assistance in the hunt for offenders, and principal officers often traveled significant distances in pursuit of felons. Because it was primarily the wealthy who engaged the services of Bow Street, this did mean that the officers primarily investigated crimes damaging to commercial interests (such as forgery, arson, and fraud) and there is certainly no sense that this was a police force acting to enforce the law uniformly and in the interest of all members of the public. Moreover, while there is little doubt that many of the principal officers were energetic and effective thief-takers, they were less effective as a preventive force and their numbers were arguably insufficient to make a significant impact on daily life in London, let alone further afield.

### Debate and Reform from 1750

During the latter half of the eighteenth century, policing was thus by no means wholly unsatisfactory in many urban areas of Britain. The significance of London as a center of population and commerce meant that policing here was the most well developed in the nation. In addition to the Bow Street Runners, many districts operated their own locally controlled police services (Paley 1989), and many parishes also paid for and operated sophisticated watch systems (Reynolds 1998). There has been comparatively little research into the policing of the rural counties, but it is likely that the quality of policing here depended primarily on the personal inclination and ability of local justices of the peace and parish constables. However, from the mid-eighteenth century onwards, significant national debates took place about the desirability of developing new modes of policing which might curtail local control and variability in the field of law enforcement. These debates were centered on London, as the most significant (and rapidly developing) urban center in the period, but also generated strong views from local authorities concerned about the implications of new forms of policing for their power to govern.

A number of factors prompted a focus on policing reform from the 1750s onwards. There was a public concern about the increasing incidence of certain types of crime (including theft, highway robbery, and rioting), but this concern has to be seen as part of a broader anxiety about how to cope with a period of rapid social change in which a mobile laboring class was developing. Equally, the expansion of the ambitions of the state during the later decades of the eighteenth century led to tensions over the correct relationship between central and local authority, and debates over policing reflected these tensions. There were also specific debates over the efficacy of existing policing arrangements as Fielding's view that crime was best prevented by an efficient detective force came under attack from others (such as Patrick Colquhoun) who believed that a preventive police (operating primarily via the patrol of predetermined beats) would be a better solution to the problem (Neocleous 2000).

Attempts to reform policing in London began in the 1780s when the City of London (the administrative division at the wealthy heart of the capital) organized a small, regular patrol for the city's streets. This patrol was uniformed from 1791 and gradually increased until it numbered 24 in 1824. In other areas of London, reform attempts began in 1785 when Pitt the Younger introduced the Westminster Police Bill, which was designed to put in place a centrally controlled police force for the whole city. This bill was defeated, but a far more moderate alternative was passed in 1792 and established seven new police offices in the city, each staffed by three stipendiary (salaried) magistrates, with six constables attached to each office. Further reforms followed, with a privately funded police force established by Act in 1798 to protect goods at London's docks. In 1800, this force was publicly funded as the Thames River Police. Private involvement in crime control remained significant. The Bank of England, for example, developed sophisticated nationwide mechanisms for apprehending and prosecuting forgers (McGowen 2005). The situation in London was unique, however, and most of the country, outside the large towns, "relied for their basic law enforcement on unpaid, part-time constables aged 30 or over" (Philips and Storch 1998, p. 5). Thus, while a variety of debates and reforms were already underway before the advent of the "New Police" in 1829, these were very much focussed on London and the larger cities (notably Glasgow), with much of Britain still policed lightly by systems which had been in place for centuries.

### The "New Police"

#### The Metropolitan Police Act 1829

The most obvious outcome of the debates around policing which took place in the period 1780–1820 was the formation of the Metropolitan Police in London in 1829. This force was the most significant element of the so-called "New Police" of the nineteenth century. This shorthand term, which came into regular use in the decade

after 1829, is now used as a useful descriptor for what many have seen as a wholesale reorganization of policing in Britain between 1829 and 1870. It refers to any of the new forces set up in response to the Police Acts of 1829, 1839–1840, and 1856 or, collectively, to all of them.

The Metropolitan Police Act was introduced to parliament by Sir Robert Peel in 1829. When Peel took over as Home Secretary in 1822, he argued the need for a new system of police – uniformed and supposedly both more efficient and more professional than their eighteenth-century counterparts and able to control the capital’s new suburbs where the old system was weak. Although the validity of the statistics Peel used to “prove” his case in 1829 (by showing a tide of rising criminality) was probably minimal, he handled the political sensitivities of the issue adeptly, concealing the fact that he had already made up his mind what the reformed police should look like (Philips 1980, p. 186). Given an easy ride through parliament because of the attention being directed to the issue of Catholic emancipation, the subsequent act established the Metropolitan Police, neatly sidestepping concerns expressed by the City of London Corporation (which was worried about infringements on its authority) by leaving it outside the jurisdiction of the measure.

Thus, in 1829, the Metropolitan Police Improvement Bill was passed, and the new force of 3,000 uniformed constables took to the streets between September 1829 and May 1830. Throughout the 1830s, there was vociferous criticism of Peel’s new force. Many commentators felt the uniforms of the new police betrayed their essentially “military” character, associating them with the gendarmeries of the continent, which were seen to serve political ends. Others complained about the cost of the new system, which was more expensive than the old and often put fewer men on the streets, but which still had to be paid for out of local taxes. In addition, there was considerable overlap with the existent forces policing London. The new police initially operated in tandem with 300 or so constables operating out of Bow Street and other police offices, under the direction of

magistrates (loosely supervised by the Home Office). While these constables were primarily a detective force, and the new Metropolitan Police were primarily preventive, there was obviously overlap in their activities. This was investigated by a number of parliamentary select committees during the early 1830s and, in 1836, the Horse Patrol was amalgamated into the Metropolitan Police, with the Bow Street constables being absorbed in 1839. The 1833 Select Committee on the Metropolitan Police did also recommend that the separate jurisdiction of the City of London be abolished, but eventually the city introduced its own police force, via a private bill which precipitated fierce debate (Harris 2004, p. 132–53). As a legacy of this, the City of London still maintains its own police force distinct from that of the rest of metropolitan London.

Thus, the introduction of the Metropolitan Police was the result of a complex process of gradual and contested reform and did not necessarily mark the distinct and sharp break with previous practices that the epithet “New Police” might suggest. Such a large, uniformed force (dressed in top hats and blue tunics with high, stiff collars), firmly based on the preventive principle of beat policing (and initially featuring no detective division), was an innovation. The fact that this new force’s commanders (two Commissioners of Police and a Receiver responsible for financial matters) were appointed by the Home Secretary and ultimately responsible to Parliament was also a departure from previous practice. Despite this, the new metropolitan force had considerable continuities of working practice with previous law-enforcement bodies, and there was also a considerable overlap in personnel, with many “old” police constables finding work within the Metropolitan Police.

### National Police Reform

Outside of London, by the late 1820s, members of the provincial ruling class were also increasingly discussing the presumed inadequacy of existing policing arrangements (Philips and Storch 1994). This did not mean that reform followed swiftly, however. After the success of his 1829 Act, Peel devised plans for a “national” network of policing managed by stipendiary magistrates controlled by

the Home Office. A bill along these lines was nearly introduced in 1832, but plans were shelved when it became apparent that local authorities were primed to resist on grounds of cost and the erosion of local control. Central control was imposed in some areas where fears of public disorder were particularly acute. In 1839, for example, Birmingham, Bolton, and Manchester had the control of policing taken out of local hands due to fears of political agitation. In general, however, the legislation which was successfully passed in the 1830s was primarily permissive – allowing for policing reform under local control but not requiring it. The national Lighting and Watching Act of 1833, for example, paved the way for urban policing reform by providing borough authorities with the means to improve their daytime watches and night patrols. The Municipal Corporations Act of 1835 specified that watch committees be set up to appoint and direct urban police forces. For rural areas, the recommendations of the rather one-sided 1836 Royal Commission on a Constabulary Force led to the Rural Police Act of 1839 (and a further amending act in 1840). This permissive act left the decision on whether to establish a rural police (as well as the control of that force) in the hands of the county magistrates.

While 24 counties had implemented the 1839 Act by 1841, and a further 11 did so in the next 15 years, around a third of counties still had not implemented any reforms by the mid-1850s. For this reason, another Select Committee was appointed in 1853 to consider the expediency of adopting a more uniform system of police. The resultant police bill, introduced in 1854 against a backdrop of extensive public order problems in the north of England, proposed that boroughs with less than 20,000 inhabitants would cede control of their forces to the counties and that there would be greater Home Office interaction with Chief Constables. These proposals again encountered stiff opposition, primarily from boroughs, with strong support from the City of London, and the bill was withdrawn. A subsequent bill introduced in 1856, which left local control of the police intact, was more favorably received, partly because of the ending of transportation to Australia, which elevated public concern over ex-convicts remaining at large in Britain.

The resultant County and Borough Police Act of 1856 made the establishment of police forces a requirement at local government level in all counties and boroughs and allowed for part-funding from central government funds via a grant which the force would only receive if it passed an annual inspection (Parris 1961).

By c.1870 almost all provincial authorities had established new police forces but, overall, police reform in the nineteenth century was a complex, evolutionary process. Most counties and boroughs recognized the need for change but feared the loss of their authority to central government. The process of reform was further complicated by the fact that some new forces around the country were actually set up in advance of the national legislation, as a result of local initiative. In Gloucestershire, for example, the parish of Dursley had created its own force in 1814 in a way which prefigured later, national interventions. Thus, the idea that the Metropolitan Police Act served as an example to other areas of the country cannot be wholly sustained. A further layer of complexity is added by the fact that other national legislation passed during the period (such as the Parish Constables Act of 1842 and the Superintending Constables Act of 1850) in fact allowed rural parishes to appoint constables on the model of the “old” system, an allowance that many availed themselves of (Philips and Storch 1998, p. 213–19). Thus, while the police forces introduced as a result of the police acts passed between 1829 and 1856 were “new” insofar as novel legislation compelled the implementation of new structures locally, the debates, delays, and diversions around this implementation meant that the “New Police” did not necessarily represent a sharp break with the past. This statement is equally true in terms of police practice, where continuities with older mechanisms of policing were also in many ways also apparent.

## **The Practice of Policing**

### **The Process of Professionalization**

By the latter quarter of the nineteenth century, recognizably modern structures of policing were

in place in England and Wales (with Scotland and Ireland, as outlined below, being policed under separate arrangements). In some senses, these “new” police forces were professional from the outset. In contrast to the “old” police, they were salaried, uniformed, and paid pensions after retirement. However, initially at least, many forces had considerable problems with both the enforcement of discipline and high staff turnover, with many constables fined or dismissed for drunkenness and inefficiency. This was partly due to key differences in the expectations the new forces had of their employees. In particular, the establishment of close supervision of the body of the constable (via drill, beat monitoring, and instruction), combined with the novel forms of time discipline required, meant that many “old” police constables found it hard to make the transition to the newer forces (Williams 2013). There were also periodic petitions in some cities for better pay and conditions. While a Chief Constables Association was formed in 1893, the clandestine Police and Prison Officers Union, which sought to represent the rank and file and organized a police strike in 1918/1919, was swiftly outlawed. British police officers have been barred from joining trade unions ever since.

Gradually, however, police forces matured as employers. The Metropolitan Police was one of the largest work organizations of any kind in nineteenth-century London, employing almost 22,000 men by 1914 (Shpayer-Makov 2002). Yet, from the outset, the Metropolitan Police (as with other British forces) was essentially a meritocracy, with all but the top 11 positions being filled from those who had risen through the ranks. This, combined with good pension provision (unusual for working-class employees during the nineteenth century), meant that the labor force of the new police gradually bedded in and the high turnover rates of the early years eventually subsided. The size, nature, and working practices of the new forces were far from static, however. As police forces matured, so new elements of professional practice were continually added to the policing repertoire, a key element of which was plain clothes detection.

Because of public fears that the new police could easily become a political “spy” police such

as that believed to operate within many European countries, there were initially no detective departments or specialized detectives within the new police forces. While there were some officers who worked in plain clothes, it soon became clear that dedicated detection activity was a necessary part of police work. The Metropolitan Police set up a detective division in 1842, and the City of London and some larger cities and towns followed suit. Yet detective activity remained a surprisingly small element of police work. There were only a few hundred police detectives in the mid-nineteenth century, although this number had more than doubled by 1918 (Shpayer-Makov 2011). Britain did also, eventually, develop a “political” police of sorts. The secretive Special Branch, initially the Special Irish Branch, was set up in 1883 to combat Irish terrorism on the British mainland, but eventually extended its activities to encompass the surveillance of a wide range of individuals, including those with known left-wing political views (Porter 1987).

The identification of suspects was another important element of police work which underwent significant development. In an age before routine identification documents such as passports, knowing whether a person held in custody was a repeat offender was a complex problem, and the new police were quick to put emerging technologies to good effect. Photography was in use in British prisons as early as 1847 but was not common practice within police forces until the 1871 Prevention of Crime Act, which set up a central registry held at Scotland Yard (the headquarters of the Metropolitan Police). By 1886, this registry contained c.60,000 photographs of known offenders, showing the police as early and enthusiastic adopters of the technology (Stanford 2002). The crucial aid to the identification of suspects was the fingerprint bureau set up at Scotland Yard in 1901. Fingerprinting rapidly became the default means of identification in use in Britain and was much emulated around the world. The technology was not developed in England, however, but rather in India in the 1890s (by the Inspector General of Police in Bengal, Edward Henry), before exported back to the metropole (Cole 2002).

Novel technologies were certainly useful to the practice of policing but much police work was (and still is) based on routine bureaucracy and this, too, is worthy of consideration. The development of sophisticated systems for sharing information of all kinds marks part of the process of professionalization of the police. Internally, from the outset, the new police forces ran themselves via interlocking systems of reports and returns, which subjected the actions of each level to the surveillance and control of those above them. In relation to crime control, the 1871 Prevention of Crime Act set up a register of “habitual criminals,” and from this register, the Home Office prepared an annual register of distinctive marks for circulation to all police forces. In addition, the Metropolitan Police maintained its own sophisticated archives which enabled better tracking and identification of suspects. Other regional forces had similar mechanisms for circulating information about increasingly mobile criminals in an era before widespread telephone communications. Such everyday practices as keeping files and circulating information in a timely and effective manner were the product of considerable thought and design and came to form an integral element of modern policing (Williams 2013).

### **The Limited Power of the State**

Although police forces were larger and better trained than ever by the turn of the twentieth century, there were always limits to the capabilities of the police. Just as the narrative of institutional police reform was a convoluted one, so the story of the development of policing practice is not just one of increasingly sophisticated techniques of control. On the one hand, despite a public rhetoric which presented the British policing as consensual and the individual constable as simply “a citizen in uniform,” the new forces undoubtedly acted to some extent to enforce new, middle-class standards of decorum. In some districts, the new constables were termed “a plague of blue locusts” due to their role in regulating drinking, gambling, and other working-class leisure activities (Storch 1975). Street offences (such as public drunkenness, vagrancy, and begging) took up an inordinate share of police time, with a similarly large focus devoted

to the prevention and investigation of property crime. White-collar crime (a term coined in 1939 to describe fraud and other financial crimes committed by those in positions of authority) was not something which occupied the police particularly during the nineteenth century. The new police could, therefore, be viewed as “a new engine of power and authority,” helping to manufacture an orderly working class suitable to the modern, capitalist economy (Philips 1980).

In reality, however, it was always impossible for the police (as for contemporary forces) to accomplish everything which might be required of them. While the police may have been granted extensive legislative powers and been asked to intervene frequently in the fields of popular morality and public behavior, this does not mean that they always did. Prevalent street culture remained resistant to police control, and the two Metropolitan Police Commissioners (and other chief constables around the country) often found themselves, of necessity, having to tread a path midway between the demands of local authorities and pressure groups, on the one hand, and the practical necessity for good relations with the populations they policed, on the other. Overall, policing practice in the nineteenth century was often designed to establish minimum standards of public order without provoking social conflict by aiming at unattainable standards. The role of discretion on the part of both individual officers (and senior commanders) in deciding what offenses to prioritize was always significant in the operation of policing. While the new police undoubtedly did spend a great deal of their time concerned with minor property crime and street offenses, these duties were often undertaken with sympathy and a degree of understanding (Lawrence 2004), and the police were in some ways a social mechanism which could be engaged by all classes (Davis 1984).

Consideration of the social backgrounds of police officers is a useful key to understanding some elements of policing practice during the period to 1918. English policemen (and they were exclusively male until the First World War) came from a range of backgrounds, but were overwhelmingly drawn from the unskilled and semiskilled

working class (Emsley and Clapson 1994). This meant that some officers were at times understandably reluctant to enforce what appeared to many of them to be pointless attempts at social engineering. Moreover, the acquisition of social status through physical strength and aggression remained a key element of working-class culture during this period, and this meant that many police officers strove to be “as hard as the local hard men” (Emsley 2009, p. 149). Violence on the part of the police was a recognized (although not celebrated) facet of policing practice for much of the nineteenth century. Public order policing (particularly the regulation of political demonstrations and trades unions meetings) remained a key part of policing and here, too, violence on part of police also far from unusual.

Overall, it is apparent that the way the police were organized and the duties they were given meant that they were more likely to come into contact with members of the working class than other social groups. It was not until the advent of mass motoring that the middle classes really came into extensive contact with the police. However, any consideration of the operation of the new police in the nineteenth century needs to recognize both the novel demands made of constables and the pragmatism and discretion with which they mediated these demands.

## Regional Variations

The policing of the outlying areas of Britain reveals both similarities and differences with England. Wales had the same legal system as England during the nineteenth and early twentieth century, and hence policing developments there followed similar patterns. Initial resistance to reform on the grounds of cost and the erosion of local control was followed by gradual acceptance. While the new police in Wales were involved in the imposition of new standards of social order, the size and composition of forces (particularly in rural areas) very often impeded the efforts of elites to impose certain aspects of social regulation (Jones 1982).

Scotland had its own legal system, yet there has been relatively little research focussed

specifically on Scottish policing. What is evident is the significance of the English model, but also the ways in which it was tailored to local conditions (Barrie 2008). Scotland emerged from the age of improvement with a modern, professional police, but constabularies were initially administered under a dual control system whereby elected police commissions shared responsibility for the administration of forces with town councils and magistrates. Scottish police forces, as was the case in England and Wales, customarily adopted a pragmatic approach to the many demands placed upon them. More significantly, as in the English case, some elements of working-class culture, such as heavy drinking, remained more resistant to the new police than both police commissions and town councils would have liked.

Ireland, despite having the same legal framework as England from 1801 to 1922, had particular social, economic, and political circumstances which made issues of law and order (particularly public order policing) especially significant. As in England, an “old” police existed in Ireland at the turn of the nineteenth century. Parochial constables had no uniform or training and were usually only policemen in their spare time, but were tolerably effective in some areas (Malcolm 2006). Reforms introduced by the government in London were implemented in 1822 via the Irish Constabulary Act, which established a new force in each barony with chief constables and inspectors general under the control of Dublin Castle (the seat of British power in Ireland). The duties of these forces were in many ways similar to those of the new constabularies in England but they were paramilitary in nature. Armed from the start and divorced from local civil control, the police in Ireland had a much more prominent role in the maintenance of public order than forces in mainland Britain.

Following the Police Reform Act of 1836 and under the command of James Shaw Kennedy (who had originally been offered the commissionership of the Metropolitan Police by Robert Peel), the Irish Constabulary (which gained the prefix “Royal” in 1867) wore bottle-green uniforms, were armed with short-barreled carbines

and sword bayonets, and lived in barracks. Dublin itself was policed by a separate civil force – the unarmed Dublin Metropolitan Police. While the RIC gradually became more representative of the Irish population, largely due to sustained efforts to recruit more Catholics into the rank and file, this process took decades, and the turnover among police personnel remained high. Thus, as with the English case, the nineteenth century saw a gradual evolution of recognizably modern mechanisms of policing in Ireland. Although the public order issues raised by Ireland's complex relationship with mainland Britain, and the armed and national nature of the RIC, meant that there were distinct differences, it is also obvious that constables in both England and Ireland faced many of the same challenges and also undertook very similar sorts of duties on a daily basis.

## Conclusions and Future Research

The advent of the “new police” in nineteenth-century Britain did not represent the sudden or total shift in institutions and practices which historians once assumed. The “old” police was in many ways a tolerably effective system in some areas, and there was significant continuity in both practices and personnel as new forces were set up post-1829. Police reform and changes in operational practice during the nineteenth century were extensive but were also often gradual and cumulative, rather than sudden or decisive. By 1918, policing in Britain and Ireland was very different to the pre-1829 era, but even in the 1880s and 1890s, many remnants of older, private, or informal mechanisms of policing still survived.

Despite 30 years of sustained academic research into British police history, however, there are still numerous unexplored topics. In particular, while significant attention has been lavished on London (rightly so, given its significance in the reform process) and a few other major cities, there is relatively little research which looks in detail at how policing was conducted in the rural areas and smaller towns of England. In addition, Wales, Scotland, and

Ireland require considerable research to establish the extent to which developments in England are generalizable to those areas also. The interaction of the new police with the many other interest groups and agencies which were involved in the regulation of social life in the nineteenth century is another area requiring further attention. The significance of policing for any true understanding of the social history of the recent past hopefully means that these areas will not be lacking research for long.

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## Broken Windows Thesis

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## Synonyms

[Incivilities thesis](#); [Order maintenance](#)

## Overview

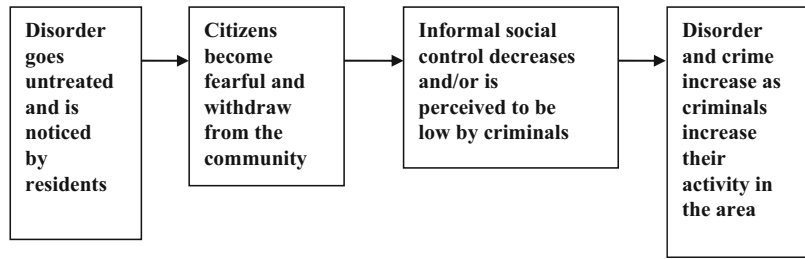
Few ideas in criminology have had the type of direct impact on criminal justice policy exhibited by the broken windows thesis. From its inauspicious beginnings in a nine-page article by James Q. Wilson and George Kelling in *The Atlantic Monthly*, the broken windows thesis has impacted policing strategies around the world. From the “quality of life policing” efforts in New York City (Kelling and Sousa 2001) to “Zero Tolerance” policing in England (Dennis and Mallon 1998), police agencies around the world have embraced Wilson and Kelling’s idea that focusing on less serious offenses can yield important benefits in terms of community safety and prevention of more serious crime. Despite this broad policy influence, research on the theory itself has been relatively weak and has produced equivocal findings as will be detailed in this entry.

## The Broken Windows Model

In a nutshell, the broken windows thesis (Wilson and Kelling 1982) suggests that police could more effectively fight crime by focusing on more minor annoyances which plague communities – hereafter referred to as disorder (some works also label these issues as “incivilities”). Disorder includes both rundown physical conditions in the form of litter, dilapidated buildings, graffiti, etc. as well as social nuisances such as panhandling, loitering, and public drinking. Their idea that crime could be prevented through targeting these issues was based on their thesis that such social ills eventually lead to community decline if left untended.

This process essentially has four key steps and begins with disorder not being dealt with in a timely manner. Trash is not picked up; loiterers are not asked to move on; people are drinking in public without being warned away. In time this invites more trash being thrown in the street, more loiterers to gather, and more people to start drinking in public. As this disorder accumulates, it sends a message to residents that things are getting out of control and that social

**Broken Windows Thesis,**  
**Fig. 1** The broken  
 windows thesis



controls have failed in their neighborhood. The key here is that residents perceive this untended disorder accumulating. It will likely have little impact if residents are not aware of the disorder in the community. In turn, the next step of the process is that residents who perceive worsening disorder problems eventually become fearful and begin to withdraw from the community. They spend less time outside, become less likely to intervene and ward off disorderly people, and, in the extreme, “good” residents may move away.

This leads to the third step of the process, which is a lowering of informal social controls. The community withdrawal results in fewer watchful eyes on the street, and the area is now less able to regulate behavior through informal social controls. As such disorder and minor crimes continue to flourish in these areas. Finally, this brings about the fourth step, in which criminals take these signs of untended disorder as a cue that such a neighborhood is a good place for them to work with relative impunity as they perceive their chances of being arrested in such areas to be slim. In Wilson and Kelling’s terms, such neighborhoods are vulnerable to criminal invasion. It is not inevitable, but such places are much more likely, in their view, to see an increase in crime than neighborhoods which exert control in regulating the occurrence of disorder. Once crime occurs, residents also notice this and the cycle of fear and withdrawal is likely to worsen as the process is essentially a feedback loop. The steps of the community decline cycle outlined by broken windows thesis can be visualized as shown in [Fig. 1](#).

As such, a main thrust of Wilson and Kelling’s argument was that police could fight

crime more effectively by dealing with disorder. If they stop disorder from accumulating and prevent neighborhoods from reaching the tipping point where they become vulnerable for criminal invasion, they can have a large impact on crime. Wilson and Kelling do not discuss what police may do in neighborhoods already past the tipping point and fully invaded by criminal behavior, but one could imply that cleaning up disorder would still play a role in restoring informal social control in such neighborhoods and helping residents take back the streets. As with any theory about crime, the broken windows thesis can be more readily understood by examining the research that influenced its formation.

### **Theoretical Development of the Broken Windows Thesis**

While Wilson and Kelling are credited with developing the broken windows thesis, they were not the first to examine the role disorder played in communities. In the area of criminology, concern over disorder can partly be traced to early research on fear of crime. One issue that drove interest in the topic was a body of research that consistently found that fear of crime had seemingly little to do with crime. For instance, most studies found that females and the elderly reported the highest levels of fear of crime, yet the National Crime Surveys conducted by the Bureau of Justice Statistics consistently showed young males to have the highest rates of victimization. Thus, fear of crime did not appear to be driven by actual victimization risk, and these findings naturally

led criminologists to question what was driving fear of crime if not crime itself.

A number of studies turned to disorder to explain fear of crime. For example, James Q. Wilson first noted in 1975 that people were troubled not only by crime but also by:

The daily hassles they are confronted with on the street – street people, panhandlers, rowdy youths, or ‘hey honey’ hassles – and the deteriorated conditions that surround them – trash strewn alleys and vacant lots, graffiti, and deteriorated or abandoned housing – inspire concern. (p. 66)

Similarly, Garofalo and Laub (1978) stated that “. . . what has been measured in research as the ‘fear of crime’ is not simply fear of crime” (p. 245) and tied fear to quality of life and concern for the community. Ideas closely related to the broken windows thesis are most clearly seen in work by Hunter (1978). Hunter suggested that disorder affected both fear of crime and actual crime through a process in which disorder signaled to residents that local controls had failed and caused them to become personally at risk of victimization. He suggested that this would increase crime and further increase fear. His work can easily be seen as an early version of the broken windows thesis.

Finally, Wilson and Kelling’s ideas were greatly influenced by a social-psychological experiment conducted by Stanford psychologist Philip Zimbardo in 1969, as indicated by the detailed discussion of the experiment in their broken windows article. Zimbardo abandoned a car with its hood up in two places – the Bronx in New York City and on the Stanford Campus in Palo Alto, California. The car in the Bronx was vandalized within 10 min, and within 24 h everything of value was removed. The car in Palo Alto, however, was not touched for more than a week. Zimbardo then smashed the windshield with a sledgehammer, and from that point on, people passing by saw the activity and the damaged car and joined in the destruction. This is where the broken windows metaphor came from for Wilson and Kelling and, combined with the above work on fear of crime and disorder, formed the basis for their ideas that untended disorder is what eventually leads to

a neighborhood becoming crime plagued. Just like the broken window on the car in Palo Alto invited more vandalism, untended disorder is a visual cue in a community which invites more disorder and eventually more serious crime.

While the theoretical underpinnings of the broken windows thesis can clearly be seen in this early work on fear of crime and the Zimbardo experiment, the law enforcement portion of Wilson and Kelling’s ideas was directly influenced by earlier research they had conducted on policing. Most notably, this is seen in the work of Wilson and Boland (1978) who noted that aggressive policing can reduce crime. Their main point was that the police may reduce crime not by how many are on patrol but rather by *what* they do while on patrol. They suggested that if police are aggressive in arresting criminals, they can have more of an impact on crime. Their study used traffic citations for as a proxy for aggressive policing and found a negative relationship between police aggressiveness and crime rates.

George Kelling was also greatly influenced by his earlier work on policing. In particular, the broken windows article repeatedly makes reference to his experience working on an evaluation of foot patrol in Newark, New Jersey (Kelling et al. 1981). In the Broken Windows article, Kelling elaborates on how his experiences on this study showed him that by being active in the community, the police could maintain order and make residents feel better, which could have positive impacts even if the police strategy was not directly reducing crime.

The above discussion lays out the theoretical foundation for Wilson and Kelling’s broken windows thesis. It is clear how work both on causes of fear of crime and studies of specific police practices laid the groundwork for their ideas that police could fight crime by tackling smaller problems – the disorder in a community that made residents fearful and uneasy. In the quarter century since its inception, the broken windows thesis has had a profound impact on policing and continues to be a subject of theoretical debate in scholarly journals. The sections below provide an overview of evidence on the validity of the broken windows thesis itself.

## Testing the Broken Windows Thesis

For a theory that has had such a large impact on police practice, the broken windows thesis has received relatively little research attention in terms of testing the theoretical propositions the broken windows thesis itself. As this section will show, there are a number of studies which have examined individual propositions of the broken windows thesis (often with no direct connection to or mention of broken windows), but few studies have set out to explicitly and directly test the entire broken windows thesis.

Looking at the broken windows thesis outlined above, one can see that there are three main theoretical propositions that make up the path from disorder to more serious crime. First, disorder must increase fear of crime among residents. In particular, perceptions of disorder are most relevant here. If residents are unaware of disorder on their block, it is unlikely to impact their levels of fear. Secondly, residents who become fearful must withdraw from the community, thus lowering informal social controls/collective efficacy. Third, crime must increase in the area in response to this withdrawal as criminals perceive the area to be a place to commit crimes with relative impunity.

### Does Disorder Cause Fear of Crime?

Wilson and Kelling (1982) suggested that disorder's first effect was increasing resident fear of crime. A number of studies have explored this issue by testing the connection between disorder and fear of crime, and a selection of these studies are reviewed here. A neighborhood-level study by Covington and Taylor (1991) found that both objectively measured disorder, as well as survey measured perceptions of disorder, were related to fear of crime. Moreover, their perceived disorder measure was the dominant effect in the model. Another study involving a panel interview of residents in Baltimore found that between the two surveys, those whose perceptions of disorder increased reported less satisfaction with the block they lived on, as well as showing greater increases in feelings of vulnerability and fear of crime (Robinson et al. 2003). Also of note, some research

has suggested that social disorder has a stronger relationship with fear of crime than physical disorder (LaGrange et al. 1992).

More recent research has also supported the link between disorder and fear. One study tested a variation of the broken windows/decline hypothesis similar to the model in Fig. 1 using a sample of neighborhoods from three waves of the British Crime Survey (Markowitz et al. 2001). Their findings suggested the model was correct. Of particular interest to the current research, they found that "the dominant effect in the cycle is the effect of disorder on fear" (p. 310). The authors thus concluded that their findings were consistent with the broken windows/decline hypothesis as they show that disorder may increase crime indirectly by increasing levels of fear which in turn reduce the level of social cohesion which may then lead to crime.

On the other hand, some research has suggested that the relationship between disorder and fear may not be straightforward. Taylor and Shumaker (1990) found a relationship between disorder and fear of crime, but noted that it may not be linear. Their findings suggested a quadratic relationship where disorder does increase fear, but as disorder gets higher, the strength of the relationship weakens. They note that perhaps people in high disorder areas get somewhat inoculated to disorder, just as people living in areas plagued by natural disasters may fear earthquakes or hurricanes less than people from other areas. In short, some people may be accustomed to disorder and not bothered by it as much. Additionally, a few studies have not found clear evidence of a link between disorder and fear of crime. For instance, Taylor's (2001) well-known study in Baltimore found that incivilities measured in 1981 and 1982 were not related to changes in fear of crime in these neighborhoods between 1982 and 1994.

Overall, the studies reviewed above illustrate that the link between disorder and fear of crime has generally been supported in past research, with a few exceptions. Thus, there is reason to believe that Wilson and Kelling (1982) and those before them (e.g., Garafalo and Laub 1978; Hunter 1978; Wilson 1975) were correct in asserting that signs of disorder make people feel

uneasy and even fearful of being victimized by crime in their neighborhood. Moving on to the next proposition, what does the research say about the link between fear of crime and withdrawal from the community?

### **Does Fear of Crime Lead to Withdrawal?**

As with the link between disorder and fear of crime, there has been work examining whether fear of crime leads to community withdrawal. Again, most of this work was done without explicit reference to broken windows, but there are studies of the topic in other areas such as tests of variables related to social control or collective efficacy (Sampson et al. 1997). A review of these studies is relevant to understanding the evidence on the broken windows thesis as informal social control/collective efficacy can be viewed as analogous to Wilson and Kelling's (1982) discussion of the ability (or inability) of a community to regulate behavior.

A study by Garafalo (1981) found that fear of crime was related to a host of social outcomes related to collective efficacy such as heightened interpersonal distrust, withdrawal of support for formal control agencies and decreased social interaction. The Markowitz et al. (2001) study cited above which found a link between disorder and fear also found that fear in turn reduced social cohesion. Thus, as with the link between disorder and fear, a review of the research on the link between fear and withdrawal/collective efficacy (and related constructs) is generally supported in past research. The majority of the studies reviewed find that increases in fear of crime are tied to reductions in things such as neighborhood cohesion, social involvement, and interpersonal trust. Moving to the final theoretical proposition, what does the research say about the impacts of withdrawal and reductions in social control/collective efficacy on crime?

### **Does Withdrawal/Weakening of Social Controls Lead to Crime?**

This link of the broken windows thesis really gets at the notion that reductions in informal social lead to increases in crime. This topic has

received a fair amount of research attention in work examining the impact of social control/collective efficacy on crime, as well as work on social disorganization theory. This brief review will focus on research on collective efficacy, as that is the specific theory of informal social control that is at the center of current debates over the broken windows thesis. Collective efficacy refers to the notion that crime can be controlled in a community where there is a high level of social cohesion/social ties and willingness to intervene for the common good (Sampson et al. 1997). Places with higher levels of collective efficacy are more able to effectively regulate behavior and thus have lower crime rates.

In general, the collective efficacy literature has been supportive of this inverse relationship between collective efficacy and crime rates. For instance, in the work first advancing the concept, Sampson et al. (1997) found that collective efficacy was negatively associated with violence after controlling for individual factors and prior violence. A study by Sabol et al. (2004) found that collective efficacy reduced youth violence, child maltreatment, and intimate partner violence. Ford and Beveridge (2004), in looking at illegal drug sales, noted that collective efficacy can prevent drug sales not only by resisting undesirable factors (like drug dealers) but also through increasing the capacity to attract positive factors (i.e., legal businesses).

However, a study by Morenoff et al. (2001) found that collective action for social control was negatively related to homicide, but found little support that social ties mattered. Thus, it appears to be important that communities have shared goals and that residents are willing to intervene for the common good, but that social cohesion/social ties may not necessarily be a key component of collective efficacy. What matters is whether a community can work together to solve crime and disorder problems. Residents may not have to have strong social ties/cohesion to share mutual goals for the community and be willing to intervene to achieve these goals. These findings fit with the broken windows thesis as Wilson and Kelling's (1982) work focused on

the notion that disorder led people to become fearful and less willing to intervene in the community. Social cohesion was not explicitly focused on in their work, as they focused more on the notion of people being too afraid to intervene and/or even moving away in response to rising untended disorder in their neighborhood.

In short, work looking at the relationship between collective efficacy and crime has generally been supportive and builds on the social disorganization literature which has a long history of showing that a community's ability to exert informal social control is a powerful predictor of crime rates. As such, the final link of broken windows has been supported with a long history of criminological work which suggests that withdrawal and other factors that reduce informal social control, collective efficacy, etc. are likely to lead to increases in crime.

### **The Current Empirical Status of the Broken Windows Thesis**

The above review shows is that there is a fair amount of support for the individual theoretical propositions behind the broken windows thesis. However, this support comes largely from a body of unrelated studies, few of which examine more than one step of the broken windows model, and even for the individual propositions, there are still mixed findings at times. In turn, there is still a great deal of debate about the validity of the broken windows thesis. While some authors have strongly advocated the model and/or broken windows policing (e.g., Bratton and Kelling 2006; Kelling and Coles 1996; Kelling and Sousa 2001), some recent research has challenged the broken windows thesis by suggesting that the relationship between disorder and crime is spurious and explained by collective efficacy (see Sampson and Raudenbush 1999).

#### **A Direct or Indirect Relationship Between Disorder and Crime?**

A study by Sampson and Raudenbush (1999) sparked considerable debate over the broken

windows thesis. Sampson and Raudenbush set out to test the broken windows thesis and collective efficacy theory using data collected as part of the Project on Human Development in Chicago Neighborhoods (PHDCN). These data included systematic social observations of physical and social disorder which were collected by videotaping segments with video cameras mounted to a vehicle which drove through study areas at 5 mph recording both sides of the streets. The tapes were then coded by members of the PHDCN research team to record levels of social and physical disorder on the study blocks. Collective efficacy and other individual-level variables were obtained through a resident survey, while crime was measured through official police data (and survey measured victimization in some models).

Sampson and Raudenbush used weighted regression analysis and measured variable path analysis in their study and found that disorder was positively related to crime. However, when they added collective efficacy to the model, they found that the relationship between disorder and crime disappeared – except for robbery where it remained significant. As such they concluded that the broken windows thesis was not supported as disorder and crime were only spuriously related – their results showed both to be a result of low collective efficacy. They argued that disorder and crime were simply different degrees of the same problem with the same underlying cause, rather than being causally related as the broken windows thesis suggests. As such, they concluded "...that neighborhoods high in disorder do not have higher crime rates in general than neighborhoods low on disorder once collective efficacy and structural antecedents are held constant" (p. 638).

Other studies have also examined this notion of a direct link between disorder and crime and produced findings that challenged the broken windows thesis. A study by Taylor (2001) found that disorder measured in 1981 was not strongly related to crime in 1994 after controlling for initial neighborhood structure. A more recent study found that neither collective efficacy nor disorder was a sufficient explanation for crime (St. Jean 2007). While high collective

efficacy and low social disorder (physical disorder did not matter) explained low crime rates, places with low levels of collective efficacy and/or high levels of social disorder were found to be about equally likely to have high or low crime rates. Finally, in another study using 16 years of census block-level data collected in Seattle, Yang (2007, 2010) found that the trends between violent crime and disorder were correlated. The direction of causation, however, was opposed to what was suggested by the broken windows thesis. The results from Granger causality tests generally showed no causal relationship between disorder and violence, and in a few places, the causality appeared to run from violent crime to disorder.

On the other hand, a recent social-psychology experiment conducted in the Netherlands did find some support for a direct link between the presence of disorder and minor criminal behavior (Keizer et al. 2008). The study manipulated the levels of disorder in places (graffiti, trash, etc.) and tested whether it had an impact on behavior among passersby. Most of the tests looked at the spread of disorder – for instance, one of the experiments which was part of this study found that the presence of graffiti in a researcher-manipulated area led to a higher likelihood of people littering (throwing a flyer attached to their bicycles on the ground) compared with another area where the researchers did not place graffiti (but also attached flyers to bicycles). However, one part other experiment examined minor theft. This experiment involved placing an envelope with a small amount of money clearly visible sticking of a mailbox. In the control setting, there was no graffiti or trash around the mailbox, and in the two experimental conditions, there was graffiti on the mailbox in one setting and trash strewn around it in the other. In both cases, passersby in the conditions with disorder present were significantly more likely to steal the envelope than those in the control condition. Of course, it is impossible to say from this study if the presence of disorder could lead to more serious crimes as the broken windows thesis suggests, or if it is just another example of how

disorder spreads (which was the main focus of the study) given the very minor nature of the crime in question.

While the methodologies of these studies are sound, and the negative results of all but the Netherlands study seem to be a large challenge to the tenets of the broken windows thesis, this body of work has been criticized as an unfair test of broken windows. The challenge to this work comes from its assertion that crime and disorder are *directly* related – that disorder directly leads to crime. Some scholars, including Kelling himself, have denied that broken windows ever implied a direct relationship between disorder and crime (Bratton and Kelling 2006; Gault and Silver 2008; Xu et al. 2005), arguing that it has always posited an *indirect* relationship between disorder and crime.

A reading of Wilson and Kelling's (1982) article would seem to support Bratton and Kelling's (2006) assertion that they have always posited an indirect relationship between crime and disorder. For instance, Wilson and Kelling stated "...at the community level, disorder and crime are usually inextricably linked, in a kind of developmental sequence" (p. 31). A developmental sequence does not imply a direct relationship. In fact, going back as far as Zimbardo's 1969 experiment, the broken windows thesis has been a social-psychological theory. It has never suggested that disorder in a community directly causes crime. Rather it has always posited that perceptions of disorder, created through visual cues of untended disorder in a community, increase fear and lead to residential withdrawal which leaves communities vulnerable to criminal invasion. Studies that look for a direct relationship between observed disorder and crime ignore the social-psychological foundation of the broken windows thesis and thus are not complete tests of the theory.

Given this flaw, the impact of Sampson and Raudenbush's study, and other work testing for a direct relationship between disorder and crime, is challenged. If Sampson and Raudenbush had specified their model in accordance with the propositions and social-psychological foundation of

the broken windows thesis, their data may have actually supported the broken windows thesis. A correct specification would test whether perceptions of disorder were positively related to levels of fear and then test whether fear in turn was negatively related to collective efficacy (the informal social control portion of the broken windows thesis) and whether collective efficacy was related to crime. Given that they found collective efficacy inversely related to crime, a finding that disorder, through increased fear of crime, reduced collective efficacy would be supportive of the broken windows' notion that disorder erodes informal social controls and leads to increases in crime.

Sampson and Raudenbush (1999) themselves even made some statements that are supportive of a true reading of broken windows. For instance, in their conclusion, they state that “[e]radicating disorder *may* indirectly reduce crime by stabilizing neighborhoods. . . .” (p. 648). This is likely based on an analysis presented in passing on page 636 in which they found that “[t]he results indicated that observed disorder increases perceived disorder, which in turn reduces collective efficacy. The significant reciprocal relationship between violence and collective efficacy nonetheless remained intact. . . .” Thus, if Sampson and Raudenbush had set up their study to test the *indirect* link between perceived disorder and crime as outlined above, their conclusions likely would have been very different, as others have noted (Gault and Silver 2008; Xu et al. 2005).

Some recent research has aimed to address this issue by testing models that are more faithful to Wilson and Kelling's conceptualization of the broken windows thesis. Xu et al. (2005), in their study of community policing, found that perceived disorder had strong direct and indirect impacts on perceived crime after controlling for collective efficacy (Xu et al. 2005) and thus challenge the assertion made by Sampson and Raudenbush. However, Xu et al. also did not model the relations in the specific order suggested by the broken windows thesis and thus limited the ability of their study to test the theoretical propositions behind the broken

windows thesis. Specifically, collective efficacy is only included as an exogenous variable in their structural equation models. Collective efficacy (along with community policing variables) is said to affect disorder and crime, which in turn affect fear of crime and perceptions of quality of life which then affect satisfaction with the police. As outlined above, a true test of the broken windows thesis as outlined by Wilson and Kelling (1982) would test the impact of disorder on fear of crime, which should in turn affect collective efficacy and crime.

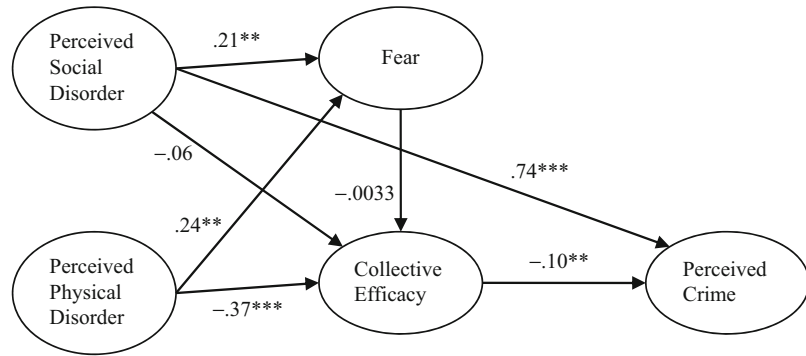
A recent study aimed to shed light on this issue by using structural equation modeling to test the relationships between perceived disorder, fear of crime, collective efficacy, and perceived crime specified by the broken windows thesis (see Fig. 1 above) using structural equation modeling (Hinkle 2009). This study used perceptual data measured through resident surveys and found support for both direct and indirect pathways between perceived disorder and perceived crime in the best fitting model (see Fig. 2 below). While caution is needed in interpreting these findings due to the study using perceptual measures of disorder and crime from the same survey, the results nonetheless suggest that theories dealing with the relationship between disorder and crime may be overly simplistic if they only consider either direct or indirect pathways between these two variables. Additionally, the final model from this study challenged the centrality of fear of crime to the broken windows thesis. Once disorder was allowed to have direct impacts on collective efficacy and crime, the relationship between fear and collective efficacy hypothesized by the broken windows thesis was no longer statistically significant. The implications of these findings are elaborated on in the concluding section below.

## The Future of the Broken Window Thesis

This review of the broken windows thesis essentially points out two key issues about the topic. First, it is an idea that has had a very



**Broken Windows Thesis, Fig. 2** Testing the broken windows thesis (Final model from Hinkle 2009)



\* =p <.05; \*\*p <.01; \*\*\*p <.001; n=773; df=405  
 SRMR=.066; RMSEA=.047; CFI=.97

large impact on policing policy and practice. Second, despite this impact, the thesis itself has not received much direct empirical research attention. While there is a good deal of evidence on the individual relationships between disorder, fear of crime, collective efficacy/informal social control, and crime, there are hardly any studies which examine all of these variables simultaneously in one model with the relationships tested in a manner consistent with Wilson and Kelling's (1982) hypotheses.

As such, we still know little about the validity of the idea behind the policing model, and thus, debates over the thesis have been a hot topic in academic circles in recent years as outlined above. Given this dearth of empirical research explicitly testing the broken windows thesis, the future of the idea is very much up in the air. What is clear is that we need a substantial amount of empirical research testing the broken windows thesis. The study by Hinkle (2009) outlined above is one example and can serve as a starting point for a discussion of where future research on the broken windows thesis should begin.

A first takeaway point from that study is that future research should ideally consider both direct and indirect pathways from disorder to crime when testing the broken windows thesis. Future studies would be aided by including hard measures of crime in addition to perceptual measures. A second takeaway point was that fear of crime did not have the expected impact on collective efficacy once disorder was allowed to have direct impacts on efficacy and crime.

While this is only one study, and this finding should thus be interpreted with caution, it does challenge the centrality of fear in the broken windows framework and suggests the need for theoretical elaboration on Wilson and Kelling's model.

For instance, while the results from this study challenge the role of fear of crime, it may also be unlikely that disorder and collective efficacy are truly directly related as the model in Fig. 2 shows. It may be more likely that there are other intervening variable besides fear of crime which mediate the impact of disorder on levels of informal social control. Maybe instead of untended disorder increasing fear and scaring off residents who care, it is more a matter of residents getting annoyed or frustrated and thus they give up intervening or even move away. Or perhaps over time some residents simply become used to the disorder and are not bothered by it as Taylor and Shumaker (1990) argued – in which case residents may become apathetic over time and thus stop intervening for the common good. Future theoretical work should consider these types of issues and attempt to elaborate on the broken windows thesis. It is up to such work to put forth more elaborate models based on theoretical propositions which clearly outline the relationships between disorder, crime, and whatever mediating variables are hypothesized to lie between these two constructs. These models can then be tested with SEM and other techniques to gauge whether they are supported empirically.

Finally, a key in sorting out these debates over the validity of the broken windows thesis will be testing the idea with longitudinal data. Most of the studies discussed above have tested the model with cross-sectional data. While such studies offer valuable insight into the broken windows model, it is nonetheless a theory of neighborhood decline that occurs over time. As such, it is best tested using data that covers a number of years. There have been some longitudinal tests of the theory by researchers such as Taylor (2001) and Yang (2007, 2010), and these tests tended to challenge the relationship between disorder and crime. However, these studies only tested for direct relationships between disorder and crime and thus were not full tests of the broken windows thesis.

## Related Entries

- ▶ [Defining Disorder](#)
- ▶ [Discriminant Validity of Disorder and Crime](#)
- ▶ [Disorder: Observational and Perceptual Measures](#)
- ▶ [Order Maintenance Policing](#)

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## “Broken Windows” Policing

- ▶ [Order Maintenance Policing](#)

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## Brutality

- ▶ [Police and the Excessive Use of Force](#)

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## Bullying

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## Overview

The study of bullying has flourished in recent years, reflecting the growing recognition of the negative long-term effects this type of aggressive behavior can have on victims and bullies. There is now a considerable body of cross-sectional and longitudinal research that has informed our understanding of what bullying is; who it is most likely to affect; what consequences it can have for victims, bullies, and the peer group; and what can be done to reduce its occurrence. This entry attempts

to shed some light on these questions by reviewing key empirical research conducted in this field over the last three decades. The piecemeal and theoretically unsystematic way in which much of this evidence has been produced, however, makes it difficult to reach a clear and coherent conclusion on why bullying happens and how it can be effectively prevented. Readers of this review should be aware of these research limitations, which, to some extent, reflect the complexity of the bullying phenomenon that precludes straightforward, one-size-fits-all conclusions.

## Bullying Defined

Bullying has received worldwide attention in the last 30 years as a form of aggressive behavior that can have a significant negative impact on the physical, emotional, and academic development of victims. The first major contribution to the academic study of bullying was made by Dan Olweus, who wrote the first scholarly book in English to deal with bullying. The book was written in response to the suicide of three bullied boys in Norway and reported a high prevalence of school bullying (20 % of Norwegian children reported having some involvement) as well as discussed the success of the world's first bullying prevention program (Olweus 1993). Olweus' work opened the way for an explosion of research on bullying, which expanded from an initial interest in schools to include broader contexts such as the workplace, prisons, and sibling relationships. While much of this work is of interest, showing that bullying has the potential to affect a significant proportion of the population, this review focuses on school bullying, as this is the area that has attracted the most research interest to date.

The international literature is replete with definitions of school bullying, most of which seem to accept that bullying is any type of negative action intended to cause distress or harm that is repeated and targeted against individuals who cannot defend themselves. When research on bullying started in the 1980s, bullying was perceived to comprise only episodes of physical or verbal aggression where the victim was physically

attacked or called names. In recent years, the definition of bullying has broadened to include other forms of aggression that are relational in nature and aim to damage the victim's peer relationships and their social status such as spreading of malicious gossip and social exclusion. Fighting between people of approximately equal strength, a one-time attack, or a good-natured teasing and play fighting are not counted as bullying.

The advent and widespread use of electronic means of communication such as mobile phones and the Internet has made it easier to bully anonymously, through the use of pseudonyms and temporary accounts, at any time and in any place involving a wide audience. This development has meant that the definition of bullying has had to be expanded to account for what the literature refers to as "cyber-bullying" or "electronic bullying." A nationally representative survey of 7,508 adolescents in the United States in 2005 found that 8.3 % had bullied others and 9.8 % had been bullied electronically at least once in the last 2 months (Wang et al. 2009). In the same year in England and Wales, a survey of pupils aged 11–16 found that 22 % had been cyber-bullied at least once or twice in the last couple months (Smith et al. 2008). The most common form of cyber-bullying internationally is sending threatening and/or nasty text messages.

## Prevalence and Continuity

### National Variation

There are large variations across countries in the prevalence of bullying perpetration and victimization. In an international survey of health-related symptoms among school-aged children, the percentage of students who reported being frequently bullied during the current term ranged from a low of 5 % to 10 % in some countries to a high of 40 % in others (Due et al. 2005). The prevalence of bullies in primary school ranges, in most countries, between 7 % and 12 % and remains at those levels in secondary school (around 10 %). It is unclear whether these differences in prevalence reflect genuinely different levels of engagement in bullying among countries or, at least partly, result from

different meanings of the term "bullying" in different countries and differences in methodologies and samples used.

An example of why valid comparisons between countries are not possible is Portugal where the bullying rate is high compared to other countries. Berger (2007) in her analysis found that one detail of educational policy in Portugal may account, among other things, for this higher rate of bullying. In Portuguese schools, children are asked to repeat sixth grade unless they pass a rigorous test. This practice results in at least 10 % of all sixth graders (more often boys) to be held back 2 years or more, and these older, bigger children are almost twice as likely to bully compared to the class average. This suggests that the difference in prevalence rates between countries may be, at least partly, accounted for by external factors including national differences in school policies and environments but also differences in the methodologies used (self-reports vs. peer and/or teacher reports), students' differing levels of cognitive ability, cultural differences in reporting, and different meanings of the term "bullying" in different countries.

### The Importance of Age

Despite variations in prevalence, it is a universal finding that bullying victimization is more frequent among younger children and steadily declines with age. A range of explanations have been put forward to explain these age differences (Smith et al. 1999a, b). Compared to older children, younger children are less likely to have developed the appropriate skills and coping strategies to deal effectively with bullies and avert further victimization. Younger children are also less likely to refrain from bullying others due to socialization pressure. Finally, there is evidence that younger students adopt a more inclusive definition of bullying when responding to prevalence surveys, and this may, at least partly, account for the higher reported frequency of bullying victimization in primary school. For example, younger pupils might find it more difficult to distinguish between bullying and fighting, broadening the use of the term bullying to include aggressive behaviors that involve no imbalance of power. Within the general trend of decreasing

bullying victimization over time, researchers have observed an abrupt increase in bullying during the transition from primary to secondary school which may reflect some students' attempts to establish dominance hierarchies in the new school environment. Relational forms of bullying take precedence over physical modes of attack as children grow older and their social skills improve.

### **Stability of Bullying Roles**

There is some controversy in the literature as to the stability of bullying victimization in primary school. Some studies have reported that bullying victimization is relatively stable over a period of up to 4 years in primary school and often continues in secondary school. Other studies have found that only a relatively small proportion of children (around 4–5 %) are victimized repeatedly over time in primary school.

In secondary school, the stability of both bully and victim roles is considerably higher than in primary school according to teacher, peer, and self-reports. It is estimated that two out of three male bullies remain in their role over a 1-year period. Despite the moderate to high stability of the victim and bully roles in secondary school, prevalence rates are lower than in primary school. This suggests that a small number of victims are targeted consistently and systematically in secondary school.

Stability in bullying victimization has been explained in two ways. Firstly, it has been observed that victims select social environments that reinforce the risk of victimization, for example, they are more likely to have friends who are less accepted by the peer group and often victimized themselves. Secondly, victims often lack the social skills to break through in new environments, and this increases the risk that they are labeled as victims and locked in that role over a long period of time. It is important, therefore, to acknowledge that although for some children bullying victimization will be situational, for others it will develop into a trait.

### **Gender Differences**

The view that males are more likely to bully and be bullied than females has been dismissed in recent

years following a better understanding about the different forms aggressive behavior such as bullying can take. Although males are more likely to engage in physical forms of bullying such as pushing and hitting, females are, according to some studies, more adept at employing relational forms of aggression (e.g., social exclusion, spreading of nasty rumors) against their victims especially during adolescence. No consistent gender differences have been identified in the use of verbal bullying (e.g., calling names, nasty teasing). This suggests that overall gender differences are not as pronounced as originally thought and that bullying is not a male problem.

## **Characteristics of Children and Adolescents Involved in Bullying**

### **The Bully**

There is some controversy in the literature about the profile of bullies. Initially, studies described children who bullied others as insecure, anxious individuals who have low self-esteem, are unpopular among their classmates, and use aggressive strategies to resolve conflicts. This stereotype was later disputed by research that suggested bullies are socially competent and have superior theory of mind skills (i.e., awareness of others' mental functions and states) and good levels of social intelligence, knowing how to attain goals without damaging their reputation. Linked to this, there is also debate concerning whether bullies lack empathic skills. Some research suggests that bullies understand the emotions of others but do not share them. The inconsistencies across studies may be, at least partly, due to different definitions of bully status and different methodologies employed. Studies which have distinguished between "pure" bullies and bully/victims have revealed that "pure" bullies have few conduct problems, perform well at school, are popular among their classmates, and do not suffer from physical and psychosomatic health problems.

### **The Victim**

There is more consensus on the profile of "pure" victims. Research has identified that "pure"

victims exhibit elevated levels of depression and anxiety, low self-esteem, and poor social skills. Hawker and Boulton's (2000) meta-analysis found that peer victimization is more strongly concurrently associated with depression than with anxiety, loneliness, or self-esteem. Another meta-analysis by Card (2003) found that the strongest correlates of the victimization experience are low self-concept, low physical strength, low school enjoyment, poor social skills, and high internalizing and externalizing problems. It was unclear from these reviews of cross-sectional studies, however, whether internalizing problems lead to victimization or vice versa.

The recent body of longitudinal research on bullying and peer victimization more widely suggests that the relationship between internalizing problems such as depression, anxiety and loneliness, and victimization is more likely to be reciprocal, that is, internalizing problems contribute to victimization and vice versa. A meta-analysis of 18 longitudinal studies examining associations between peer victimization and internalizing problems in children and adolescents concluded that internalizing problems both precede and follow peer victimization experiences (Reijntjes et al. 2011). It is worth noting, however, that the path from psychological maladjustment to victimization has not been replicated in all studies. For instance, Bond et al. (2001) found no support for the hypothesis that emotional maladjustment invites victimization.

Recent work suggests that bullying might arise out of early cognitive deficits, including language problems, imperfect causal understanding, and poor inhibitory control that lead to decreased competence with peers, which over time develops into bullying. Research does not support the assertion that physical appearance (e.g., wearing glasses) is a risk factor for being bullied at school. The only physical characteristic that has been associated with an increased risk of victimization is low physical size and strength. There is less evidence on how equality characteristics influence victimization. There is no consistently robust evidence to suggest that ethnic minority children are more at risk of being bullied at school. Sexual orientation has rarely been

investigated in longitudinal studies as a possible risk factor of bullying victimization, but there is some, mainly qualitative, evidence of sexual minorities being targeted in secondary schools. There is stronger evidence that children with disabilities are particularly vulnerable to victimization in mainstream settings, although it might be other characteristics of disabled children that make them more vulnerable to victimization such as lack of friends rather than the disability per se.

### **The Bully-Victim**

Olweus (1993) was the first researcher to identify a small proportion of victims of bullying that he called "provocative victims" or "bully-victims," who bully other children as well as being bullied by them. Research has identified that bully-victims are the most troubled group among children and adolescents involved in bullying incidents. This group displays the highest levels of internalizing problems, including depression, anxiety, low self-esteem, and loneliness. At the same time, they score high on externalizing problems such as aggression, impulsivity, hyperactivity, and conduct problems. Other research has shown that bully-victims display higher levels of neuroticism and psychoticism than either bullies or victims. Bully-victims use aggressive strategies to cope with stressors at school that increase the risk of further victimization and rejection from peers.

### **The Peer Group**

Besides the traditional roles of bully, victim, and bully-victim, research has identified that all students take on a role when bullying episodes emerge. Salmivalli et al. (1996) distinguished between six different roles children can take in bullying situations: the bully (leader), the reinforcer (encourages and provides audience), the assistant (follower/helper, e.g., holds the child down), the defender (helps the victim and/or tells bullies to stop), the outsider (stays away from bullying situations), and the victim. Subsequent research established that the three roles of bully, reinforcer, and assistant are closely correlated with each other and, therefore, cannot usefully discriminate between children. In kindergarten, the three most commonly held roles are those of

the bully, the victim, and the defender. Fewer students are defenders by middle school, and the majority becomes witnesses or bystanders when bullying takes place. Such passive behavior, although not directly encouraging of bullying, provides a permissive context for bullies that allows them to continue harassing their victims.

## Environmental Influences

### Parenting and Home Environment

There is clear evidence that parenting styles are related to bullying behavior. Studies indicate that bullies are more likely to have parents who are authoritarian and punitive, disagree more often, and are less supportive. The parents of bullies are more likely to have been bullies themselves when they were young. Victims, on the other hand, are more likely to have been reared in an overprotective family environment. Bully-victims tend to come from family backgrounds that are exposed to abuse and violence and favor the use of harsh, punitive, and restrictive discipline practices. This group reports little positive warmth in their families and more difficulties in communicating with parents.

Family characteristics are related to bullying victimization in different ways for boys and girls. Boys are more prone to victimization when the father is highly critical or absent in his relationship with his son, thus failing to provide a satisfactory role model. Victimization in boys is also associated with maternal overprotectiveness which may hinder boys' search for autonomy and independence, whereas victimization in girls is more strongly related to maternal hostility which may lead to anxiety and decreased sense of connectedness in relationships.

Very little research has examined longitudinal associations between early home environment and subsequent bullying behavior. The few studies that exist suggest a link between low emotional support and subsequent bullying behavior at school. Parents who are disagreeable, hostile, cold, or rejecting tend to have children who are at risk of becoming aggressive in the future. In a small longitudinal study, Schwartz et al. (1997) found that bully-victims at 10 years were

significantly more likely than the other groups to have had experiences with harsh, disorganized, and potentially abusive home environments 5 years earlier. Mother-child interactions at 5 years were characterized by hostile, restrictive, or overly punitive parenting. They were significantly exposed to higher levels of marital conflicts and more likely to come from marginally lower socioeconomic backgrounds. Bullies were found to be exposed to adult aggression and conflicts, but not victimization by adults, and were from lower socioeconomic backgrounds. These findings need to be replicated in larger samples before any safe conclusions can be drawn.

### Sibling Relationships

More recently, there has been interest in how sibling relationships affect the development of bullying behavior. There is international evidence that children who are victimized at school are more likely, compared to other groups, to be victimized by their siblings at home. Wolke and Samara (2004) found that more than half of victims of bullying by siblings (50.7 %) were also involved in bullying behavior at school compared to only 12.4 % of those not victimized by siblings, indicating a strong link between intrafamilial and extrafamilial peer relationships. Those who were both victimized at home and at school had the highest behavior problems and were the least prosocial. Similar evidence exists in relation to bullying perpetration, suggesting that those who bully at school tend to exhibit similar behaviors towards their siblings at home.

### School Factors

A number of school factors have also been implicated as correlates of bullying behavior. One of the most consistent findings in the international literature is that the number and quality of friends at school is one of the strongest, if not the strongest, protective factor against bullying victimization. Having friends is not sufficient in itself to protect against victimization. For instance, when at-risk children have friends with internalizing problems, who are physically weak or who themselves are victimized, the relation of children's behavioral risk to victimization is exacerbated.

More recent work on the role of class structure and climate on bullying has shown that variations in peer structure and dominance hierarchies influence the stability of bullying victimization. For example, victims in primary school classes with a more pronounced hierarchical structure are less likely to escape their victim role compared to those in classes with less clearly marked hierarchies (Schäfer et al. 2005).

## Consequences

There has been a growing interest in recent years to investigate the long-term effects of bullying involvement on children's and adolescents' social, emotional, behavioral, and academic development using longitudinal samples. The results of these studies suggest that victims and bully-victims manifest more adjustment problems than bullies. Victims and, especially, bully-victims are more likely to show elevated levels of depression, anxiety, and loneliness; perform less well academically; and display conduct problems. The only negative long-term outcome that has consistently been reported in the literature for bullies is their involvement in later offending. There is also some initial evidence that bullying perpetration is a significant risk factor of poor academic performance.

## Internalizing Problems

Several cross-sectional studies have demonstrated negative associations between peer victimization and a range of internalizing problems, including loneliness and low self-esteem. A meta-analysis of 23 cross-sectional studies of the association between peer victimization and psychological maladjustment found that peer victimization was more strongly concurrently associated with depression than with anxiety, loneliness, or self-esteem (Hawker and Boulton 2000).

Over the last decade, research on bullying is increasingly reliant on longitudinal methodologies to disentangle whether victimization contributes to internalizing problems or vice versa. It has been argued, for example, that children who display internalizing behaviors (e.g., anxiety or

shyness) are more at risk of being targeted by peers due to their inability to cope effectively with provocation. The majority of longitudinal studies investigating associations between peer victimization and psychological maladjustment have found evidence for both directions.

## Academic Performance

There is some longitudinal evidence that bullying involvement has a negative impact on academic performance, although more studies are needed to reach a definitive conclusion. A US longitudinal study that began in 2002 with a sample of about 1,700 adolescents found that being a bully had a stronger negative effect on self-perceived academic competence over time than being a victim after controlling for demographic background variables and baseline academic competence (Ma et al. 2009). Furthermore, only bully status predicted lower self-reported grades.

## Delinquency and Criminality

Despite showing fewer adjustment problems than victims and bully-victims, bullies are at an increased risk of later delinquency and criminal offending. A recent meta-analysis of studies measuring school bullying and later offending found that school bullies were 2.5 times more likely than noninvolved students to engage in offending over an 11-year follow-up period (Ttofi et al. 2011). The risk was lower when major childhood risk factors were controlled for, but remained statistically significant. The effect of bullying on later offending was especially pronounced when bullying was assessed in older children. The longitudinal association between bullying perpetration and later offending has been replicated in many countries, including Australia, Canada, and Europe.

## Impact Beyond Victims

Finally, there is evidence that bullying and victimization have a negative impact not only on the individual children involved but also on bystanders. Children who witness bullying incidents report increased anxiety, less satisfaction with school, and lower academic achievement.



There is also evidence that in school classes where a lot of victimization is taking place, school satisfaction among students is low.

## Interventions

Following the development of the first anti-bullying program by Dan Olweus in Norway in the 1980s, a considerable number of anti-bullying interventions have flourished around the world to reduce bullying behaviors and protect victims. These fall under four broad categories: curriculum interventions generally designed to promote an anti-bullying attitude within the classroom; whole-school programs that intervene on the school, class, and individual level and address bullying as a systemic problem; social and behavioral skills training; and peer support programs including befriending and peer mediation. A systematic review conducted in 2004 evaluated the strength of scientific evidence in support of anti-bullying programs (Vreeman and Carroll 2007). The review concluded that only a small number of anti-bullying programs have been evaluated rigorously enough to permit strong conclusions about their effectiveness.

Whole-school interventions were found to be more effective in reducing victimization and bullying than interventions that focused only on curriculum changes or social and behavioral skills training. Targeting the whole school involves actions to improve the supervision of the playground, having regular meetings between parents and teachers, setting clear guidelines for dealing with bullying, and using role-playing and other techniques to teach students about bullying. The success of whole-school interventions, relative to other stand-alone approaches, supports the view that bullying is a systemic, sociocultural phenomenon derived from factors operating at the individual, class, school, family, and community level. Hence, interventions that target only one level are unlikely to have a significant impact.

A more recent systematic review of school-based anti-bullying programs found that, overall, these programs are effective in reducing bullying perpetration and victimization by an average of

20–23 % and 17–20 %, respectively (Farrington and Ttofi 2009). The interventions that were found to be most effective were those that incorporated parent training/meetings, disciplinary methods, and videos; targeted older children; and were delivered intensively and for longer. There is less robust evidence on the effectiveness of peer support programs that include activities such as befriending, peer counseling, conflict resolution, or mediation, and a systematic review suggested their use may lead to increases in bullying victimization.

More recently, there has been a growing interest in the use of virtual learning environments to reduce bullying at schools. The basic feature of these programs is a computer-based environment that creates a highly believable learning experience for children who find themselves “present” in the situation that causes emotional distress and, as a result, learn experientially how to deal with school problems. An example of such a program is “FearNot,” an intervention that was developed to help victims of bullying explore the success or otherwise of different coping strategies to dealing with bullying victimization through interactions with “virtual” victims of school bullying. The evaluation of this intervention found that the victims that received the intervention were more likely to escape victimization in the short term than victims in control schools who did not interact with the software (Sapouna et al. 2010). These results suggest that the use of virtual environments might be an engaging and useful component of whole-school anti-bullying policies that merits further testing. A key finding that emerged from this research is that interventions are more likely to be successful if they have the support of teachers and other school personnel and there is a strong commitment to reduce bullying in the school community. This is considered to be one of the reasons behind the huge success of the Olweus’ prevention program that has not been replicated to date.

## Future Directions

Although an abundance of knowledge has emerged in recent years regarding the correlates of bullying behavior, there is still relatively little

known about the causal processes and mechanisms associated with the bully and victim status. Longitudinal studies, which track bullies and victims over time, offer one of the best chances of disentangling the antecedents of bullying perpetration and victimization from its consequences, and these should form a key part of future research in this field. Another approach which shows much promise is the cutting-edge attempt to unravel the causes of bullying behavior made by researchers investigating biological and environmental influences and the way these influences interact.

One of these studies, involving 1,116 families with 10-year-old twins, found that the tendency for children to be bullied was largely explained by genetics (73 % of variance) and less so by environmental factors that were unique to each child (Ball et al. 2008). Another study of 506 six-year-old twins found that variance in victimization was accounted for only by shared and non-shared environmental influences (29 % and 71 %, respectively) and was not related to the child's genetic predisposition (Brendgen et al. 2008). These discrepancies might be explained by differences in methodologies used, as studies drew on different informants to assess bullying victimization (mothers and peers, respectively). Although results to date have been contradictory, future breakthroughs in this area have the potential to transform radically the study of bullying.

To understand more fully how bullying behaviors develop, future research will also need to investigate in more depth how individual and classroom level factors interact to cause involvement in bullying. It is not currently understood whether the relationship between risk factors and bullying is the same across different school and class environments or the extent to which consequences of bullying and victimization are dependent on class- and school-level factors.

Finally, another area that would benefit from more attention is the investigation of resilience to bullying. Some initial evidence suggests that maternal warmth has an environmental effect in protecting children from negative outcomes associated with victimization (Bowes et al. 2010). However, we still know relatively little about the factors

that promote resilience to bullying and victimization among at-risk children, and also what role bullying has to play in increasing resilience. We also know little about the factors that help victims cope better with the effects of victimization.

To conclude, what the recent flurry of research activity has highlighted is how complex the bullying phenomenon is and that, although much has been learned to date, there is clearly a great need to understand how variables describing the family, school, class, and community environment interact with individual characteristics to determine who gets bullied and who bullies others. Research should neither be blind to nor discouraged by these complexities.

## Related Entries

- ▶ [School-Based Interventions for Aggressive and Disruptive Behavior: A Meta-Analysis](#)

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## Bullying Prevention: Assessing Existing Meta-Evaluations

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### Synonyms

[Evaluation](#); [Intervention research](#); [Meta-analysis](#); [Prevention](#); [School aggression](#); [School programs](#)

### Overview

In this entry contemporary methodological issues in bullying prevention research are considered. The findings of extant systematic reviews and meta-analyses of school-based bullying prevention programs are assessed and integrated, with the aim of drawing clearer and more differentiated conclusions regarding their efficacy. Conclusions are drawn based on six reports, of which two included a systematic review but no meta-analysis, two included a systematic review and a meta-analysis, and two were not based on systematic searches of the literature but included some level of meta-analytic assessment. Based on a careful screening of all available meta-analytic investigations, it is concluded that bullying prevention programs are

effective in reducing bullying and victimization. However, research users should be careful in identifying those intervention components and implementation procedures that are associated with a reduction in bullying. The entry concludes by identifying important challenges currently faced in the field of bullying prevention and highlighting areas for future research and implications of this work for psychologists and social scientists in general. The findings from this review of reviews are intended to inform both policy and public health practice related to bullying prevention.

## Introduction

Research on school bullying has expanded considerably over the past two decades. It is now acknowledged as an established international research program, with worldwide coordinated efforts in founding a concordant methodological terminology for the explanation of this phenomenon (Smith et al. 2002). To a great extent, the strong scientific interest in bullying has been linked to the detrimental concurrent effects of school bullying for both perpetrators and victims. Notably, previous research has also established the long-term significant association of school bullying with internalizing (e.g., depression) and externalizing (e.g., offending and violence) problems (Ttofi et al. 2011a, b, 2012).

It comes as no surprise that a great deal of research has been invested in intervention efforts targeting the school environment (e.g., Waasdorp et al. 2012). Ideally, at the level of primary research, social scientists and research users should aim to draw conclusions from the most successful intervention studies always in line with explicit methodological quality standards. At the level of secondary research, a number of reviews of bullying prevention programs are also available. Ideally, these reviews should critically assess and synthesize the existing evaluation research, with the final aim of minimizing bias in the conclusions on which policymakers and practitioners are based. However, bias is not only the province of primary studies – it may also exist at the level of a review (Wilson 2009).

This is also true in the case of anti-bullying research (with a marked number of competing bullying prevention programs available), and it lays further weight on the importance of carefully assessing and utilizing *evidence-based* bullying prevention programs. It is for this reason that this entry focuses primarily on summarizing and juxtaposing what is methodologically the most high-quality evaluation research, with the final aim of drawing conclusions about what has been learned and what needs to be done next in the bullying prevention field. These aims will be accomplished by taking into account existing findings at the level of secondary research, namely, via systematic reviews and meta-analyses.

## Methods

Bullying prevention could be seen as a form of early crime prevention as well as a form of early health promotion initiatives (Ttofi et al. 2012). This is true, however, only in the case of efficacious interventions. In an attempt to make suggestions about the most *scientific* and *evidence-based* bullying prevention programs, this synthesis of reviews of current evaluation studies is based on explicit inclusion criteria set in advance, namely, (a) reports presenting a systematic review of evaluations of bullying prevention programs aimed to reduce the level of school bullying perpetration and victimization (and not other outcome measures) or, ideally, (b) reports presenting both a systematic and meta-analytic review of the relevant literature. Reports that present some level of meta-analytic synthesis are also reviewed, although they may not be based on systematic searches. Reports that assessed bullying prevention programs based on narrative reviews are excluded, because this type of research carries a high risk of bias. An extensive search was conducted in order to obtain all relevant systematic and meta-analytic reviews.

## Results

To date, a growing number of school-based bullying prevention programs have been developed

and evaluated, but relatively few attempts have been made to synthesize the relevant rigorous outcome-based research findings (see Table 1). An extensive search of the literature revealed just six reports that met the inclusion criteria. Of the six reports, (a) two included a systematic review but no meta-analysis (i.e., Smith et al. 2004; Vreeman and Carroll 2007), (b) two included a systematic review and a meta-analysis (i.e., Merrell et al. 2008; Farrington and Ttofi 2009; Ttofi and Farrington 2011; references referring to the same project), and (c) two were not based on systematic searches of the literature but included some level of meta-analytic assessment (i.e., Baldry and Farrington 2007; Ferguson et al. 2007; only the latter carried out a full meta-analysis calculating weighted mean effect sizes for bullying perpetration).

Consistent with previous literature (Farrington 2003, 2006; Petrosino 2003), it is clear from the review of Table 1 that there is a marked degree of variation in the criteria employed and, to some extent, the quality of the currently available research reviews. Four of the included reviews of bullying prevention programs were based on systematic searches of the literature, but the intensity of the searches varied considerably. For example, the studies ranged from (a) 1 to 35 journals searched, (b) 1 to 18 databases screened, (c) 2 to 14 keywords for the online searches, and (d) the screening of 321–622 relevant documents. Only the most recent review (Farrington and Ttofi 2009; Ttofi and Farrington 2011) coded all relevant manuscripts based on a “relevance scale” in line with the aims of the systematic review.

Within each review, the timeline for carrying out searches also varied. While some authors set the beginning of searches in the 1980s and after the first Olweus Bullying Prevention Program evaluation (i.e., Farrington and Ttofi 2009; Merrell et al. 2008; Ttofi and Farrington 2011), others set their timeline for beginning searches in the 1960s, perhaps because the authors included outcome measures other than bullying (e.g., “school violence” and “peer aggression” in the Vreeman and Carroll (2007) review). It is plausible that variations in searching strategies are also affected by the type of language restrictions that

the reviewers set in advance. Of the four systematic reviews, two were not transparent on this issue (i.e., Smith et al. 2004; Vreeman and Carroll 2007), and one specified language restrictions in obtaining studies written in English (Merrell et al. 2008). Only the Ttofi and Farrington (2011) systematic review was unrestricted and included studies in other languages such as German, Spanish, and Italian.

What reviewers and meta-analysts defined as “systematic” varied greatly in line with the type of inclusion criteria set in advance – and, more importantly, the extent to which these criteria were carefully followed. It is disconcerting that two out of four meta-analytic reviews computed effect sizes from uncontrolled designs despite the fact that their inclusion criteria explicitly defined “either controlled studies or quasi-experimental studies only” (i.e., Baldry and Farrington 2007; Merrell et al. 2008). Another meta-analytic review (i.e., Ferguson et al. 2007) included only evaluations of bullying prevention programs that were implemented using a controlled design. However, since the actual evaluations included in the meta-analysis are not shown in the relevant publication, it is not possible to ensure that all studies met this criterion.

All meta-analytic reviews calculated effect sizes based on evaluations of age-cohort designs, consistent with the approach employed by Olweus (2005). However, only one of these reviews (Farrington and Ttofi 2009; Ttofi and Farrington 2011) presents not only a summary effect size across all studies irrespective of their methodological design but also a summary effect size relating to each of the four types of methodological designs (i.e., an overall summary effect size and also four separate summary effect sizes specific to randomized experiments, before-after experimental-control studies, other experimental-control studies, and age-cohort designs).

What is also apparent from this synthesis of existing evaluation research is that the results vary greatly depending on the *theoretical stance* of the authors. For example, three out of six reviews included “bullying and other related antisocial behaviors” as an outcome measure (Ferguson et al. 2007; Merrell et al. 2008; Vreeman

**Bullying Prevention: Assessing Existing Meta-Evaluations, Table 1** Efficacy of bullying prevention programs: A synthesis of reviews

Publication	Baldry and Farrington (2007)	Ferguson et al. (2007)	Vreeman and Carroll (2007)	Merrell et al. (2008)	Farrington and Tofi (2009); Tofi and Farrington (2011)		
<b>Inclusion criteria/ characteristics of the evaluation synthesis</b>	<p>Smith et al. (2004) Systematic review (no meta-analysis) including studies of: Evaluation of whole-school bullying prevention programs Reports with quantitative data Studies conducted in more than one classroom (see p. 549)</p> <p>Baldry and Farrington (2007) No systematic review "Meta-analytic" evaluation of programs (effect sizes for each study is given, i.e., percent change, but not a weighted effect size for each study or a weighted summary effect size) Evaluations with at least 200 students included Experimental or quasi-experimental or age-cohort designs Programs specific to school bullying Studies with quantitative data</p> <p>Ferguson et al. (2007) No systematic review Meta-analytic evaluation of programs aiming to reduce either bullying or violence Only studies with random assignment to experimental and control group Controlled studies only School-based programs Only manuscripts published in journals (see pp. 406–407)</p> <p>Vreeman and Carroll (2007) Systematic review (no meta-analysis) including studies of: Controlled studies with follow-up measures School-based programs aiming (i.e., specific) to prevent bullying (see p. 79) The reviewers "extracted data from the selected articles regarding direct outcome measures of bullying, including bullying . . . aggressive behavior, violence . . ." (ibid.)</p> <p>Merrell et al. (2008) Systematic review and meta-analysis including studies if (see p. 28): School-based intervention Targeting bullying or peer-related antisocial behavior that could be interpreted as bullying Controlled studies or quasi-experimental studies with some sort of control group Published in English only No restriction to the type of manuscript (e.g., books and theses included) Quantitative data presented</p> <p>Farrington and Tofi (2009); Tofi and Farrington (2011) Systematic review and meta-analysis including studies if (see pp. 31–32 from journal paper): Evaluation of a program specifically targeting (kindergarten to secondary) school bullying Clearly stated definition of bullying shown in the publication Measurement of bullying via self-, peer, and teacher reports or observational or other data Evaluation including an experimental and control group with baseline and follow-up measures (including age-cohort designs analyzed separately) Published and unpublished reports of any type (including theses and government reports) Quantitative information that allowed calculation of an effect size</p>	3 (p. 549)	4 (p. 186)	12 (p. 406)	2 (p. 79)	5 (p. 28)	14 (see p. 33)
<b>Keywords used (N)</b>							

<b>Language restrictions</b>	Not specified (one German report included)	Yes; only reports in English (p. 185)	Not specified (the names of the actual reports are not indicated)	Not specified (all included reports in English)	Yes; only reports in English (p. 28)	None (e.g., included reports in the English, German, Spanish, and Italian languages)
<b>Databases searched (N)</b>	3 (see p. 549)	1 (p. 186)	Not specified; but not a systematic review	7 (p. 79)	2 (p. 28)	18 (p. 33)
<b>Journals searched (N)</b>	1 (aggressive behavior)	Not specified, but not a systematic review	Not specified; but not a systematic review	Not specified	Not specified	35 (p. 33)
<b>Screened documents (N)</b>	323 (p. 549)	Not specified	Not clear: "42 studies relating to 45 separate observations" (p. 407)	321 (p. 79)	Not clear; but it is indicated that 40 studies were obtained and screened (p. 29)	622 reports screened and coded based on a relevance scale (p. 33 and Table 2, p. 34)
<b>Timeline for beginning searches</b>	Not specified	Not specified	Beginning of 1995	January 1966	Beginning of 1980	Databases searched from the inception; journals searched from beginning of 1983
<b>Timeline for ending searches</b>	End of December 2002	End of 2006	End of 2006	End of August 2004	End of 2004	End of May 2009 (see Campbell Report, Tables 1 and 2)
<b>Coding of program components</b>	Yes; 16 components coded (Tables 1, 2, 3; pp. 551–553)	Yes; general components for each program indicated (Table 1, pp. 187–188)	No	No (Table 2 shows outcome measures targeted by the program only (pp. 83–84)	Yes; general components for each program indicated (Table 3, pp. 32–36)	Yes; 20 (see Fig. 3 from Campbell Report, p. 144) Feedback/confirmation via e-mail about the way components were coded from 40 out of 44 evaluators of studies (see p. 40)
<b>Coding of implementation features</b>	Yes; 5 features coded (Tables 1, 2, 3; pp. 551–553)	Yes; 3 (Table 1, pp. 187–188)	Yes; 3 features (Table 1, p. 408)	No (see above)	Yes; general features of implementation indicated (Table 3, pp. 32–36)	Yes; 12 (see Fig. 2 from Campbell Report, p. 143) Feedback/confirmation via e-mail about the way features were coded from 40 out of 44 evaluators of studies (see p. 40)
<b>Age</b>	Primary and secondary students	Primary and secondary students	Primary and secondary school students	Primary and secondary students	Primary and secondary students	Kindergarten, primary and secondary students

(continued)

Bullying Prevention: Assessing Existing Meta-Evaluations, Table 1 (continued)

Publication	Smith et al. (2004) (2007)	Baldry and Farrington (2007)	Ferguson et al. (2007)	Vreeman and Carroll (2007)	Merrell et al. (2008)	Farrington and Tofi (2009); Tofi and Farrington (2011)
<b>Informants</b>	No restrictions: Student reports Peer reports Parent reports Teacher reports School records (see p. 549 and Table 1, pp. 551–552)	No restrictions: Student reports Peer reports Parent reports Teacher reports School records (see p. 185)	Not specified (see pp. 406–407)	Not specified (see p. 79 and Tables 1 and 2, pp. 80–84)	Outcome measures based only on: Student reports Teacher reports (see Table 1, p. 29)	No restrictions: Student reports Peer reports Parent reports Teacher reports School records (see pp. 31–32)
<b>Presenting a meta-analysis with summary effect size</b>	No; standardized effect sizes within studies and a summary weighted mean effect are not presented	No; percent change for time 1 to time 2 within each program is given, but not: (a) a standardized effect size within each study or (b) a weighted summary effect size (see Table 2, p. 189)	Yes; Fisher's z	No; standardized effect sizes within studies and a summary weighted mean effect are not presented	Yes; Cohen's d is presented (Table 4, p. 37)	Yes; standardized effect sizes given: a) separately for each program, b) for the total number of evaluations, and c) for studies grouped within each of the four methodological designs
<b>Effect size magnitude</b>	Not applicable	Perpetration: Reductions within programs (percent change) from -1 % to -80 % Increases within programs (percent change) from +1 % to +59 % Victimization: Reductions within programs (percent change) from -3 % to -62 % Increases within programs (percent change) from +2 % to +44 %	Perpetration: Fisher's z (bullying) = 0.12 Fisher's z (violence) = 0.13 Victimization: Not applicable (only a summary effect size across studies is presented; standardized effect sizes within each program are not shown)	Not applicable	Perpetration: d = 0.04 Victimization: d = 0.27 (only a summary effect size across studies is presented; standardized effect sizes within each program are not shown)	Perpetration: Summary OR across 44 studies = 1.36 Summary ORs within each methodological design also given individual ORs within studies ranging from 0.68 to 2.56 Victimization: Summary OR across 44 studies = 1.29 Summary ORs within each methodological design also given individual ORs within studies ranging from 0.40 to 3.14 (see Table 3, p. 36)



<b>Reports included (N)</b>	14 (p. 549)	19 (Table 1, pp. 187–188)	Only number of studies specified clearly (p. 407)	26 (Table 1, pp. 80–82)	Only number of studies specified clearly (p. 29; see also Table 3)	89 (see Appendix, p. 48)
<b>Studies included</b>	14: 8 controlled designs 4 age-cohort designs 2 uncontrolled designs/no control group (Muthe 1989; Peterson and Rigby 1999)	16: 7 controlled designs 6 age-cohort designs 3 uncontrolled designs/no control group (Pepler et al. 1994; Peterson and Rigby, 1999; Pitts and Smith 1995)	42 studies relating to separate observations (p. 407); the actual reports are not shown, so the actual type of study designs cannot be confirmed; the authors indicate that only controlled studies were included	26, but only 17 with bullying as an outcome (see Table 1, pp. 80–82) Of the 17: 13 controlled designs 1 age-cohort design (Olweus 1994) 2 uncontrolled designs/no control group (Roland 2000; Tierney and Dowd 2000)	15: 15 studies, but only 13 specific to bullying Of the 13: 7 controlled designs 2 age-cohort designs 4 uncontrolled designs/no control group (Cowie and Olafsson 2000; Mueller and Parisi 2002; Oppinas et al. 2003; Pepler et al. 1994)	53, but only 44 had statistical information that allowed inclusion in the meta-analyses (see Appendix, p. 48) Of the 53: 17 evaluations of randomized experiments 21 evaluations with before-after, intervention-control comparisons 4 other intervention-control comparisons 11 age-cohort designs (see Appendix, pp. 48–50)
<b>Outcome measures</b>	All studies specific to bullying	All studies specific to bullying	23 on nonviolent bullying 22 on violence (see Table 1, p. 408)	17 studies specific to bullying 9 studies on other outcomes (see footnote)	13 studies specific to bullying 2 studies on other outcomes (see footnote)	All studies specific to bullying (perpetration or victimization)
<b>Correlating features to effect sizes</b>	No	No	Yes; moderator analyses based on age, outcome variable (i.e., bullying or violence), and population type (children at risk for violence versus general school population)	No	No	Yes; moderator analyses for all program components and implementation features (see Tables 4 and 5, pp. 41–42) Also weighted multiple regression analyses (Table 6, p. 44)
<b>Conflict of interest (COI) analyses</b>	No mention in the review of the presence of COI analyses at the level of primary studies	No presentation of separate effect sizes between independent evaluations and the developer as evaluator in the meta-analysis; this	No presentation of separate effect sizes between independent evaluations and the developer as evaluator in the meta-analysis	No mention in the review of the presence of COI analyses at the level of primary studies	No presentation of separate effect sizes between independent evaluations and the developer as evaluator by the developer as	No presentation of separate effect sizes between independent evaluations and the developer as evaluator in the meta-analysis

(continued)

**Bullying Prevention: Assessing Existing Meta-Evaluations, Table 1** (continued)

Publication	Smith et al. (2004) (2007)	Baldry and Farrington (2007)	Ferguson et al. (2007)	Vreeman and Carroll (2007)	Merrell et al. (2008)	Farrington and Ttofi (2009); Ttofi and Farrington (2011)
<b>Cost-benefit analyses</b>	Not present at the level of secondary analyses; no mention of cost-benefit analyses at the level of the level of primary research either	Not present at the level of secondary analyses; no mention of cost-benefit analyses at the level of primary research either	Not present at the level of secondary analyses; no mention of cost-benefit analyses at the level of primary research either	Not present at the level of secondary analyses; no mention of cost-benefit analyses at the level of primary research either	Not present at the level of secondary analyses; no mention of cost-benefit analyses at the level of primary research either	Not present at the level of secondary analyses, but the importance of this research is acknowledged (see p. 46); no mention of cost-benefit analyses at the level of primary research either

**Note 1:** Evaluations with other outcome measures in the Vreeman & Carroll (2007) synthesis include: Elliot & Faupel, 1997 (on children's solutions on hypothetical bullying scenarios); Englert, 1999 (on violence); Fast et al., 2003 (on peer aggression); Metzler et al., 2001 (on perceptions of safety, feelings of being target of harassment, discipline referrals and reports of receiving praise); Mitchell et al., 2000 (on school initiatives promoting health); Teghisi & Rothman, 2001 (on peer aggression); Twemlow et al., 2001 (on school violence); Warden et al., 1997 (on ability to respond to hypothetical dangerous situations, including hypothetical incidences of bullying). Exact references can be found in the Vreeman and Carroll (2007) paper.

**Note 2:** The authors (Merrell et al., 2008) argue that they have included 16 evaluations in their meta-analyses of various outcome measures (see table 4, p. 37). Effect sizes for each study are not presented and searches/screening of documents is not clearly specified, but the following should be noted: (a) four publications of the same evaluation (i.e. those related to the Flemish Anti-bullying Program by Stevens and colleagues) are presented as separate evaluations. On table 1, we have counted all four publications as one study; (b) the Leadbeater et al. (2003) publication includes relational and physical victimization as outcome measures; it is not specific to bullying victimization; and (c) one evaluation (i.e. Newman, 1999) is presented alongside the age-cohort design evaluated in Norway by Olweus. However, the Newman (1999) evaluation was conducted in the States and the outcome measure targeted improving teachers' knowledge of appropriate bullying intervention skills that they should be utilizing; participants were school teachers and not students. Exact references can be found in the Merrell et al. (2008) paper.

and Carroll 2007), whereas other reviews focused specifically on bullying (Smith et al. 2004; Baldry and Farrington 2007; Farrington and Ttofi 2009). The *methodological approach* of the reviewers can also affect their analytic strategies. For example, Vreeman and Carroll (2007, p. 79) "... did not exclude or discount studies based on ... *retention rates* or program *intensity* because these characteristics are not associated definitely with the strength of treatment effects." In contrast, the authors of the latest systematic review (Farrington and Ttofi 2009; Ttofi and Farrington 2011) coded the *program intensity* and *duration* and correlated these features with the effect sizes in order to examine their association. Ttofi and Farrington (2011) also identified concerns about *retention rates* – and issues with possible *differential attrition* – which are related to the effect size measures; some of the effect sizes for specific evaluations included in their review were not based on the published reports but based on results obtained via e-mail communication with evaluators, in order to avoid biased findings resulting from issues related to differential attrition, multiple imputation methods, etc. (Farrington 2006; Farrington and Ttofi 2009).

As another example, the review by Ferguson et al. (2007), which was not based on systematic searches, primarily aimed at extending previous research by conducting publication bias analyses (see pp. 405–406), but they restricted their searches to journal articles only (see p. 407). In contrast, other reviews (e.g., Farrington and Ttofi 2009; Ttofi and Farrington 2011) did not set language or sample size restrictions, or limit the type of manuscripts to be included, because of concerns about publication bias. While there is some disagreement about this issue in the literature, it is common for researchers to extend searches beyond published reports in evaluation research of primary studies (Wilson 2009).

In conclusion, the existing reviews of the efficacy of bullying prevention programs varied greatly in methodology employed, including their inclusion criteria, depth of searches, and screening of relevant documents. Consequently, the resulting meta-analyses presented a summary effect size obtained from 13

(Merrell et al. 2008), 23 (Ferguson et al. 2007), and 44 (Farrington and Ttofi 2009; Ttofi and Farrington 2011) evaluations accordingly. These differences in methodology and number of studies included could explain the marked discrepancies in the summary effect obtained across reviews, as shown in Table 1. This could also explain why some previous reviews (e.g., Ferguson et al. 2007; Merrell et al. 2008) concluded that bullying prevention programs had little effect in reducing the level of bullying perpetration and victimization, while other reviews (Farrington and Ttofi 2009) were optimistic in their findings. Ideally, these reviews should critically assess and synthesize the existing evaluation research, with the final aim of minimizing bias. However, bias is not only the province of primary studies – it may also exist at the level of a review (Wilson 2009).

### Open Questions and Future Research Directions

The rapid growth in the research on school bullying has undoubtedly advanced the scientific knowledge in this issue. However, considerable work is still needed for its successful translation into effective practice and policy (Swearer et al. 2010). For example, systematic reviews in social sciences offer a great promise. Unfortunately, reviews published in social science journals quite often lack a methodological rigor or transparency in the methods. This is evident in the current synthesis of previous meta-evaluation studies of bullying prevention programs. When conducting research trials of prevention programs, researchers in psychology and other social sciences should follow the methodological quality criteria of the Consolidated Standards of Reporting Trials (CONSORT) statement (Altman et al. 2001), or the procedures outlined by the Cochrane Collaboration for secondary research reviews, as is common in public health and medicine. There is a steady trend in the social sciences toward greater transparency in the research process, as illustrated by increased efforts to create an equivalent CONSORT statement for the social sciences (Perry and Johnson 2008) and

the creation of the Campbell Collaboration's methodological criteria for secondary analyses (Farrington et al. 2011). These standards for evaluation research can also be used by scholars, policymakers, and the general public to assess the validity of conclusions about the effectiveness of interventions in reducing bullying at school (Ttofi and Farrington 2011). This entry has provided clear examples of how substantial differences in the procedures followed for secondary reviews can result in marked differences in the conclusions drawn across these reviews regarding the effectiveness of bullying prevention programs.

Another important guideline in future meta-evaluation research refers to the issue of conflict of interest. The importance of conducting conflict of interest (COI) analyses is well established in the fields of medicine and public health. Within the field of criminology, recent studies have also shown that the reported effect sizes of prevention and intervention trials are larger when program developers are involved in a study than when trials are conducted by independent researchers; these differences may be due to various different types of biases, including biases resulting from conflict of interest issues (Eisner 2009; Farrington 2006). COI analyses have not been conducted in previous meta-analytic studies of bullying prevention programs, and this is a promising new line of research. It is noteworthy, for example, that the effect sizes obtained from the independent evaluation of a specific bullying prevention program are substantially smaller than those obtained from trials conducted by the developer as evaluator (Eisner 2009), although other explanations are also possible. Eisner and Humphreys (2011) developed an instrument for assessing COI in evaluation research, and initial tests of the scale in the area of family interventions are very promising. Interested scholars in the area of school bullying could begin a new line of evaluation research by testing and perhaps refining the relevant scale.

Another highly neglected topic at the level of meta-analytic research is that of cost-benefit analyses (Farrington and Ttofi 2009). Cost-benefit analyses can be a big "selling point" to policymakers

and potential funding agencies, especially given the scarce resources that schools are often faced with. Admittedly, this type of analyses can also be conducted at the level of primary research. It is interesting to indicate, however, that of the 53 different evaluations of bullying prevention programs, only the review by Bagley and Pritchard (1998) included a cost-benefit analysis.

In prevention and intervention research, a distinction is made between efficacy, effectiveness, and dissemination trials (Flay et al. 2005). The importance of this distinction has been highlighted in meta-analyses that have examined factors that affect the size of treatment effects, with larger effect sizes found in efficacy trials (Eisner et al. 2011), most likely due to the increased researcher-imposed support and structure during the implementation process. This distinction is absent in the current meta-analytic studies of bullying prevention programs despite the fact that it may be critical when it comes to translating research findings into policy recommendations. Most evaluations of bullying prevention programs would fall under the category of efficacy trials, with relatively few meeting criteria for effectiveness research (Flay et al. 2005); additional research is needed to examine whether dissemination trials would demonstrate significant effects of bullying prevention programs. Within the area of bullying prevention, there are very few examples of programs being rigorously tested when being brought to scale (e.g., Karna et al. 2011; Waasdorp et al. 2012). Future research should also try to establish factors related to sustainability of the treatment effect when going to scale as well as the issue of sustainability of the treatment effect at longer follow-ups. Notably, the majority of bullying trials have relatively short follow-up periods, which does not allow for the contextual changes, such as in the school climate or school culture, or leadership, which we theorized are important impacts of effective bullying prevention programs (Bradshaw and Waasdorp 2009). Many other recommendations for future research can be made, and for a more detailed discussion, interested readers should seek advice from

a paper that is being prepared for a special issue of the *American Psychologist* journal (Bradshaw et al. [submitted](#)).

## Conclusions

The mixed findings from the extant reviews of bullying prevention approaches have been particularly disconcerting to policymakers, researchers, and practitioners alike (Bradshaw and Waasdorp 2011), as several reviews have provided a rather pessimistic interpretation of the state of the science in bullying prevention programming (e.g., Ferguson et al. 2007; Merrell et al. 2008), whereas others have been more optimistic (e.g., Farrington and Ttofi 2009; Ttofi and Farrington 2011). As a result, many are unclear where the field stands in terms of the evidence base for bullying prevention programming. The current entry aimed to provide greater transparency across the extant reviews so that various constituents can have a better understanding of potential reasons for the discrepant findings. Given the current focus on contrasting the scientific approaches employed by the different reviews of bullying prevention studies and extracting a general conclusion regarding the efficacy of bullying prevention efforts, it is not possible to endorse any specific program or model. Rather, the current study aimed to provide some guidance for researchers, policymakers, and practitioners on the extent to which each of the reviews employed various research-based approaches, as these methodological issues likely impacted the conclusions drawn from the research. Given the significance of bullying prevention for policy and prevention science, we issue a call for more longitudinal randomized controlled trials of promising programs and programs in wide use (particularly in the USA), as well as more rigorous systematic and meta-analytic reviews, in order to strengthen the current evidence base for preventing bullying programming. Many challenges but also many promising avenues lie ahead for future research in the area of bullying prevention and

intervention. The time is ripe for a new research agenda in unexplored scientific avenues such as conflict of interest analyses and cost-benefit analyses to mention a few.

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## Buprenorphine

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