

POLICING DOMESTIC VIOLENCE: THE PROBLEM-SOLVING PARADIGM

by

**Lawrence W. Sherman, University of Maryland and Heather Strang,
Australian National University**

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Abstract

Policing domestic violence is the most scientifically developed application of the problem-solving paradigm. Its current state reveals many basic challenges to the paradigm as a tool for crime prevention. While there has been great progress in adopting the goal of preventing domestic violence, there has been less understanding and use of the paradigm's methods for accomplishing that goal. Almost no work has been devoted to defining the problems more precisely (classification). Analyses of risk factors have been approached with basic errors of logic (prediction). Evaluations of police responses, while scientifically rigorous, have been unwelcome due in part to their complexity (causation). In the short run, both violence prevention and science can be fostered by better measurement of domestic violence trends. In the long run, progress in identifying more effective policing strategies for prevention and control can be achieved only by a culture of science in policing, just as medicine was transformed by such a cultural change in the early Twentieth Century, in which trial and error becomes the norm for crime prevention.

Introduction

Almost two decades ago, Herman Goldstein (1979) sparked a revolution in thinking about policing. In a devastating critique of the police administration paradigm as a pointless "means over ends" ritual, Goldstein compared "well-managed" police agencies to bus lines that stay on schedule by picking up no passengers. In place of the century-old paradigm of police reform through bureaucratization, he suggested a new paradigm focused on the "end product" of policing: trying to solve the problems of public safety that citizens bring to the police. The problem-solving paradigm of policing he suggested had three essential elements:

- 1) defining public safety problems more precisely

- 2) analyzing each problem
- 3) finding more effective solutions to each problem

Problem-solving policing is science. By testing hypotheses with empirical observations, it draws conclusions about taxonomy, prediction, and causation which correspond to the three elements of Goldstein's paradigm.

Policing domestic violence is the most scientifically developed application of the problem-solving paradigm. For over three decades, police and academic social scientists have tested hypotheses about the classification, prediction and prevention of domestic violence. While some tests have been inconclusive and contradictory, many useful results have been found and supported through replication. Police know far more about the prevention of domestic violence than they do about preventing any other offense. While this knowledge is still quite minimal in relation to the many untested hypotheses, it is a useful case study in the developmental course of the problem-solving paradigm. As in science generally, that course is not as smooth as some might wish. It is all the more valuable, therefore, to examine this problem-solving experience as a guide to crime-prevention efforts in general.

The purpose of this paper is to examine the current state and future directions of the problem-solving policing science of domestic violence. This is a more limited task than reviewing the entire science of domestic violence, since our concern will focus on hypotheses with immediate bearing on police efforts to prevent domestic violence. These hypotheses are divided into the three elements of Goldstein's (1979) problem-solving paradigm.

The method of this paper is to focus on the best available data on the central questions, especially the National Institute of Justice domestic violence experiments (Sherman 1992) and the Victorian domestic violence data base (Strang and Sherman 1996). The

published domestic violence data, policies and practices of the San Diego Police Department, a world leader in problem-solving policing, are also used to exemplify the state of the art. The paper begins with a review of the problem-solving paradigm in policing, and its relationship to the scientific method. It then compares police knowledge and practice to the goals of the paradigm, element by element. The paper concludes with two major implications of the domestic violence experience: the need to expect continuing revision in scientific "truth," and the even greater need to improve police measurement and management of the various types of domestic violence.

The paper shows that the three elements of Goldstein's paradigm have been only superficially understood by police. In the case of domestic violence, almost no effort has been devoted to improving the *classification* of domestic problems for purposes of police practices. Somewhat more effort has been devoted to developing *prediction*, but those efforts have been mathematically flawed and unscientific. The most effort has been devoted to assessing police impact on the *causation* of domestic violence, with highly advanced methods of testing hypotheses. Both the complexity and bad news of the results from these tests has baffled many, and made it more difficult to infuse problem-solving with science. This reaction, in turn, reflects the lack of understanding of the nature of science, which is the central barrier to the advance of the problem-solving paradigm as a means to better crime prevention.

Fortunately, policing has become increasingly linked to institutions of science, which supply the field with substantial elements of the problem-solving paradigm. The National Institute of Justice in the United States, the Australian Institute of Criminology, the British Home Office, and the many academics linked to these central bodies continue to mobilize the methods as well as the goals of problem-solving. Police openness to these linkages has steadily increased, widening the path to deeper understanding and utilization of the paradigm. From gun violence (Moore 1980) to

abandoned cars (Skogan 1990), police are increasingly gathering data that may better enable them to classify, predict, and prevent.

These points are clearly supported by the experience with domestic violence. Two decades ago, few police officers approached domestic violence with a goal of crime prevention. Maintaining order or doing rough justice in the present moment was the most pressing concern, with little concern for the effect of their current actions on the odds of future violence (Sherman 1984). Judging by recent police developments such as those in the San Diego Police Department, there is a clear shift towards the focus on crime prevention, at least in official policy. There is also far more data collection and computerization of data bases on domestic violence than a decade ago, exemplified by the Victoria, Australia police data base initiated in the late 1980s and later elsewhere (Ferrante et al 1996). American police have cooperated with a remarkable series of controlled experiments in domestic violence, at the request of the National Institute of Justice. But the commitment to the goal of prevention remains far stronger than the use of the scientific method to improve prevention.

In the short run, however, policing can build on the best understood aspect of the paradigm: the focus on results. The fact that no police agency yet measures domestic violence reliably makes it impossible for any agency to manage its prevention more effectively. Short-term investment in development of acceptable indicators of the magnitude and seriousness of the problem will open a path to more scientific management of police prevention efforts. These indicators may then foster long-term growth of a trial-and-error culture of problem-solving.

Classification: Varieties of Domestic Violence

The area of least scientific progress in domestic violence prevention may well be classification. As Goldstein observed, the legal categories police traditionally use to

generate crime statistics are far too abstract to analyze and solve real-life problems.

While the empirical category of "domestic violence" is a major advance in classification over the legal category of "assault," too many police agencies have failed to subdivide domestic violence into categories appropriate for separate prevention strategies. In consequence, much of the debate about proper police policy for "domestic violence" fails to make relevant distinctions among cases varying by severity of injury, repeated incidents, presence or absence of the offender when police respond to a recent incident, and other important dimensions.

This section empirically examines the major dimensions in domestic violence from a policing perspective, showing how major variations in domestic violence must become incorporated into police recordkeeping if the problem-solving science of prevention is to make further progress. It then considers the focus, theory and method of classification as the foundation for prediction and prevention.

Severity of Injury. "Domestic violence" embraces everything from a shouting match to a shooting. This labeling process minimizes the significance of the most serious cases, and overstates the significance of the far more numerous cases without injury, or even without physical violence at all. This may lead police to do too little about the most serious cases because they are attempting to do too much about the least serious ones.

In both Milwaukee and Victoria, for example, the majority of incidents labeled "domestic violence" have no evidence of actual violence; police determine upon investigation at the scene that the incidents are "arguments," "disturbances," or otherwise nonviolent events. Three percent of the 1200 cases in the Milwaukee domestic violence experiment involved serious injury while 53% were verbal incidents only (Sherman 1992); the Victoria data, based on forms police filled out after 42,728 "domestic" incidents, indicated that for 49% of incidents no crime had taken place and that violence was involved in 21% of cases (Strang and Sherman 1996). This striking

similarity is found despite the fact that Milwaukee's rate of domestic homicide is seven times higher than Victoria's.

The masking of severity of harm is even clearer in the rare cases of serious injury, which are undifferentiated in even the most advanced police statistics. Police records could be designed to include a few simple indicators of serious injury, minor injury and no injury. The reported rate of threats in one out of four Victorian incidents (Strang and Sherman 1996) suggests that it is another dimension of severity police could measure. Almost any reliable measure of the pyramid of injury--in which the vast majority of cases report little medical problem or life-threatening potential--would be an improvement upon the current practices of lumping most domestic cases together.

Repeat Offenders and Victims. Another dimension obscured by the overly broad label of "domestic violence" is the prior history of violence, or at least police encounters, of the couple, the offender and the victim. In both Milwaukee and Victoria, the repeat cases are a substantial portion of all domestics, and may merit very different strategies of prevention. It would seem quite useful for police officers responding to domestic calls to be briefed about the people they will soon deal with, if only for the recent history. Yet few if any police agencies routinely supply such data to their patrol officers. In one Minneapolis case, 13 different police units responded to one couple in 48 hours, with none of them aware of the prior police contacts (Sherman 1992: 215).

Offender Presence. Perhaps the most practical dimension affecting responses to domestic incidents is whether the offender is present when police arrive at the scene. The massive debate in the US over mandatory arrest has generally ignored the 2 out of every 5 criminal cases in which the offender is gone on arrival (Sherman 1992: 120, 150). The range of police options is clearly different, and perhaps more limited, when the offender is gone. It may also be that offenders who leave are different in important

ways from those who remain, with some evidence that they are more deterrable than those who defiantly stay at the scene (Dunford 1990; Sherman 1993).

Other Dimensions. The Victorian and U.S. data illustrate several other dimensions on which domestic incidents can be classified. Visible signs of alcohol abuse are present in up to half the cases in Victoria, comparable to the 42% for offenders and 21% for victims in the Milwaukee experiment (Sherman 1992: 344). Other important risk factors that have been used to classify domestic violence include the employment status of the offender, pregnancy of the victim, socio-economic characteristics of the neighborhood, an impending or recent divorce or separation, the presence of children in the home or ongoing child custody disputes of a separated couple (Ohlin and Tonry 1989). It could be quite important to consider more operational factors like these:

- o does the couple speak the same language as the police officers?
- o did the victim, neighbors or someone else call police?
- o is the home legally controlled by the victim, offender or both?
- o does the victim or offender have adult relatives nearby or in the home? o has there been any property damage?
- o how cold, hot or wet is the weather?
- o does the victim or offender own a car? a phone?
- o does the offender have a criminal record for serious non-domestic violence?
- o has the victim sought a court order of protection against the offender?
- o has the victim suffered injury in the past from the offender?
- o how old is the offender? the victim?
- o how long has the couple been together? currently cohabiting?

Even this list omits any dynamic factors, such as the behavior of the victim and the offender at the scene: does the offender attack the victim again after police arrive? damage property? attack police? Does the victim tell police to leave, or demand an

arrest, or tell police to remove the offender, or interfere with police efforts to restrain the offender? Just beginning to list the various dimensions of domestic cases suggests the complexity and variation police encounter.

Combining Dimensions. The often-heard street police adage that "every domestic is different" may well be true, at least for each officer. That is due not so much to the number of dimensions as to the mathematics of their combination. The dimensions listed above can be combined in a variety of ways, as Goldstein (1979) has suggested. But a complete cross-classification of just 24 dimensions would result in a taxonomy of over 50 million different kinds of domestic violence cases, so clearly an approach other than mere cross-classification is necessary.

Taxonomy for Prevention. Goldstein's (1979) paper offers many examples of multi-dimensional classifications and subdivisions of crime problems, such as "teenagers snatching the purses of elderly women waiting for buses in the downtown section of the city during the hours of early darkness." In this example, we have the offender and victims ages, the weapon status (none), the location and the time of day: a five dimensional classification.

The paradigm's primary purpose for more precise classification is to improve the effectiveness of crime prevention. That purpose cannot be accomplished by mere descriptive analyses. It requires knowledge about which dimensions are most important for assessing risk of future violence, as well as the dimensions which affect the results of police action. That knowledge, in turn, is enhanced by both better theory and hypothesis testing. At the theoretical level, it requires moving beyond the individualistic approach to understanding causation, incorporating social characteristics as well. At the empirical level, it requires testing the effectiveness of police interventions under theoretically structured conditions--discovering what works when and why.

The classification of domestic violence should therefore interact with its prediction and prevention, in order to guide the choice of preventive policing tactics. Before offering a taxonomy for prevention, we must first examine what we know about prediction and prevention. While we still have much to learn about the factors listed above, what we know already provides a starting point for linking the varieties of domestic violence to the varieties of police interventions.

Prediction: Domestic Violence and Homicide

The foundation for any effort to prevent or control a problem is the capacity to predict its occurrence. By prediction we cannot mean perfect accuracy, as the utility of often-incorrect weather forecasts demonstrates. Our world appears to be generally too chaotic to expect perfect prediction in any realm, from the stock market to athletic competitions (Gleick 1987). But it is very orderly with respect to risk factors, or estimates of the relative odds of events occurring under different conditions. With the odds of lung cancer 30 times higher among smokers, we quite appropriately "predict" that smokers are more likely than non-smokers to get lung cancer. Yet many people are astonished to learn that 96% of smokers never contract lung cancer. We cannot predict with certainty which smokers will contract lung cancer (see Reiss 1972), but we can predict that smokers in general have a higher probability of cancer.

The distinction between certainty and probability in prediction is often difficult to grasp. Failure to understand it is the basis for the anger--and even lawsuits--directed at weather forecasters, doctors, and increasingly the police themselves. Police agencies across the United States have been sued for failing to predict, and thus to prevent, domestic homicides and serious injuries. The central issue in such cases is whether the harm was "reasonably" likely to occur absent some police action. This question confuses the relative probability of harm with the certainty, or error, in predicting such harm in the individual case. While a risk factor (like type of weather front) may greatly increase the

probability of harm (like a tornado), the degree of error in predicting the harm will occur (perhaps 99 times in 100) may be too high to justify extreme measures (like evacuating an entire community). Similarly, even where prior domestic violence makes domestic homicide some 15 times more likely to occur, 99% error in predicting homicide in any given case clearly limits the range of preventive actions which can be reasonably recommended.

An even more basic aspect of prediction is widely misunderstood in legal culture, from the U.S. Supreme Court to police cars: numerators versus denominators. Many erroneous conclusions have been drawn from descriptive statistics about numerators, without any consideration of relevant denominators. In *PENNSYLVANIA V. MIMMS* [434 U.S. 106 (1977)], for example, the U.S. Supreme Court concluded that traffic stops were dangerous for police because they were the most frequent situation in which police were murdered. That is, among all police murders, the largest single category was traffic stops. The denominator that the court omitted was the volume of traffic stops, which is also the single most frequent police activity (Garner and Clemmer 1986). Using this denominator allows a prediction that police murders are far more probable in a robbery arrest than in a traffic stop--or in a domestic call, also a high volume police activity erroneously labeled highly lethal.

Predicting Domestic Homicide. This same error was made in the widely-cited Police Foundation study of domestic homicide in Kansas City. This study found that 85% of all domestic homicides had been preceded by a police encounter at the same address within the preceding two years, and that 50% had experienced five or more prior dispatches to the address (Breedlove et al 1977). Based on the findings, Wilson (1977) suggested that data on domestic calls might be analyzed to develop an "early warning system" for serious domestic injuries. While the idea of such a system was a brilliant precursor to the problem-solving paradigm, the analytic basis for it was profoundly flawed. Not only were there many errors in predicting homicides by individuals from

data limited to street addresses (including large apartment buildings); even more erroneous was the "hindsight fallacy" of prediction based on numerators only.

The San Diego Police provides a more recent example of this error. On its WWW Home Page (p. 41) are listed nine risk factors indicating an elevated likelihood of homicide, including threats of suicide or homicide, weapons possession or past use and drug or alcohol consumption. All of these factors appear quite plausible on their face, largely because they are all present in the "numerators:" descriptions of previous domestic homicide cases. Whether they would all remain high risk factors after controlling for a denominator is the unanswered scientific question.

True prediction can only employ what is known before a homicide occurs. That constraint shapes the analytic question: given the denominator of the number of couples in which one, two, five or fifty nonfatal domestic calls have summoned police, what is the numerator of cases resulting in homicide or serious injury? It is the resulting fraction that measures the level of homicide risk, as well as the level of error called "false positives." The latter concept is the basis for the old joke about meteorologists predicting "ten out of the last three snowstorms." The failure of a risk factor to predict a problem is an additional category of prediction error called "false negatives." By not looking for domestic homicides among couples without prior contact with police, the prediction analysis produces a false negative for every homicide among such couples. The accuracy of predictions is thus a combined assessment of both false positives and false negatives, both over-prediction and under-prediction.

Given this standard of prediction, the accuracy of available methods for predicting domestic homicides is extremely low. While several retrospective, numerator-only analyses of domestic homicides have found high levels of prior violence (Saltzman et al 1990; Goetting 1991; Canadian Bureau for Justice Statistics 1994), these findings have little value for prediction. Only two prospective, or predictive, studies are available of

domestic homicides in relation to a denominator of prior domestic calls. One is the Milwaukee analysis (Sherman et al 1991a) of the denominator of 15,537 nonfatal incidents of domestic violence and the numerator of 33 domestic homicides. The other is the Victorian analysis of the denominator of 41,245 nonfatal domestic calls and the numerator of 74 domestic homicides (Strang and Sherman 1996). Both studies produce 95% false negatives, and almost 100% false positives.

The Victorian data reflect far lower rates of both homicide and domestic incidents than those reported in previous US studies. For example, the relative risk ratios for Milwaukee over Victoria are 6.5 to 1 for homicide and 5.5 to 1 for nonfatal incidents. Despite these differences in base rates, the consistency between Milwaukee and Victoria in the low predictive accuracy of homicides based on prior police records is striking. In both cities, just 1 in 20 homicide victims had a prior domestic incident during the same study period as the homicides. In Milwaukee, only 15% of the domestic homicide offenders (5 out of 33) had a prior domestic incident in the record; only 3% did in Victoria. There was no evidence in either city of any pattern of escalating frequency of nonfatal events reported to police in the period preceding the homicide. In Victoria, the relative risk ratio between victims with and without prior reports is 16 to 1. In Milwaukee, controlling for an estimated time at risk (not directly measured as in Victoria), the ratio is 5 to 1.

The most surprising aspect of these findings, however, is their comparability to the prediction of lung cancer based on smoking. Predicting which smokers will get lung cancer is almost as inaccurate an exercise as predicting which domestic violence victims will ultimately be murdered. But being named in a police report in Victoria elevates the risk of premature death about half as much as becoming a cigarette smoker; in Milwaukee it is about a sixth as much. When a predictive factor such as smoking or prior domestic violence shows such dramatic escalation in risk, its potential value for prevention may depend upon how the at risk population reacts to the warning. It is

instructive, for example, that despite a high false positive rate in tornado warnings, increased communication of such warnings over the past half century in the US has cut the annual tornado death rate by 80% (ABC News, July 17, 1996).

Thus, the fact that police contact over a domestic incident predicts a vastly increased risk of being murdered is a tool police can use for homicide prevention on a broadly targeted basis, rather than with individual victims. Lung cancer prevention efforts are not targeted at particular smokers, but at the population of smokers (and potential smokers) as a whole. The same approach, in theory, is possible for efforts to encourage victims to terminate or leave domestic relationships at the very first sign of violence. Not the least of the considerations here is the enhanced risk which may accompany an attempt to leave a relationship. It is not clear whether attempts to leave result from or cause a higher risk of death (Wilson and Daly 1993), but the issue must be faced in police decisions about how to advise victims. There are no risks of injury resulting from quitting smoking, but that may be the case with quitting a violent relationship. It is at this point that the analogy to smoking breaks down, and we must deal with the complexity of humans rather than chemicals as risk factors.

The most important conclusion from these findings is that all but a tiny fraction of domestic homicides occur without prior notice to police. This means that there is presently no way for police to target homicide prevention on "high-risk" cases, since no reported systematic findings distinguish high and low probability cases on an individual basis.

Predicting Serious Injury. Absent further research, police lack valid tools to predict nonfatal but serious injury from domestic violence. There are almost no prospective epidemiological studies making serious injuries the numerator, and taking the denominator from prior police records (or any other data at all). That does not mean that such studies would be futile. To the contrary, the much larger number of nonfatal than

fatal injuries relative to the same denominator of prior police contact would make it statistically easier to detect any predictive connection. The relative risk from being involved in a violent relationship known to police would also become clearer and more reliable using nonfatal injury as the outcome criterion.

One test of the hypothesis that threats predict serious injury is based on the Milwaukee file of 15,537 domestic violence reports, in which 108 threats to kill or shoot a victim at some future time were identified (Sherman et al 1991a). There was no record of any of the victims being injured during the average followup period of 16 months after the threat, although there was one case of firearms discharge near the victim that hit no one. It would seem that even in a fairly violent setting like concentrated poverty areas of Milwaukee, the rate of implementing threats to kill (as reported to police) is much lower than 1 in 100.

The Victorian data provide the only available test of the "escalation" hypothesis for nonfatal cases using police data (Strang and Sherman 1996). The average seriousness of all repeat incidents to come to police attention in Victoria on 1988-92 has been examined, measured crudely by the three categories of no violence, threatened violence, and actual violence. While some cases involve as many as eleven repeat calls, the number declines at each level of repeat, though the number of cases remains above ten through the 7th incident. No evidence is found of escalation in seriousness of these repeats. More frequent or more total incidents of domestic calls to police does not generally mean more serious incidents, at least in Victoria. Thus, despite the widespread belief among police and others in the "escalation hypothesis," there is no reported empirical evidence to support that hypothesis.

The data may however conceal a pattern of escalation among cases that start at a high level of violence and move higher. Such cases are routinely reported in the clinical and police literature (Sherman, 1992: chapter 9). They may be reported more because they

are unusual than because they are typical or in any way representative of most cases. But they need not be typical in order to merit special attention, given the high level of suffering, medical expenses and other costs they may entail. The absence of more detailed predictive analysis of police data along a continuum of injury remains a serious gap in the literature.

Analyses of non-police data available for police use could also be valuable. Perhaps the most urgently needed prediction study is the relative risk level associated with court orders of protection. The high prevalence of such orders, or people on the way to get such orders, in accounts of serious injury and homicides suggests that they could be substantial risk markers. So too might patterns found in records of battered women's shelters or hospitals willing to cooperate with police on injury prevention programs.

Predicting Repeat Incidents. One prediction that is highly accurate and firmly established is that victims who have been repeatedly victimized in the past are highly likely to be victimized in the future as well. In both Victoria and Milwaukee, the odds of future incidents rise as high as 70% for victims who have been involved in nine or more prior incidents (Milwaukee N = 1112 victims, 2037 incidents; Victoria N = 35,697 victims, 40,799 incidents). Police can thus identify with some certainty the victims most likely to suffer again in the future, and who are therefore the best targets for violence prevention. While the number of such victims is relatively small, the number of incidents they are involved in can be quite large. In Victoria, the 35 victims with 7 or more incidents accounted for a total of 275 incidents (Strang and Sherman 1996).

These predictions of elevated risk can be pinpointed in time as well as by individual. Farrell (1995) reports a substantially elevated risk of recurrence in the immediate aftermath of a variety of incidents, from school vandalism to burglary, and including domestic violence. A similar analysis of 1643 cases in the Victorian data (Strang and

Sherman 1996) in which violence was reported in the initial incident shows a substantially elevated risk of repeat violence in the first 24 hours after the last incident relative to later days, and in the first month after the last incident, relative to later months. Both these predictions may point to relatively greater investment in short-term preventive programs, such as battered women's shelters, portable radio-to-police alarms rotated from victim to victim (Farrell 1995), or even protective custody.

The time-course findings are particularly important from the standpoint of prediction error. The prediction that there will be a recurrence of domestic violence in the next 24 hours or 28 days will almost always be wrong in any particular case. Yet the intrusion produced by any protective intervention is greatly minimized by the limited time frame. The personal and financial cost of staying in a shelter indefinitely, for example, is prohibitive; the cost of one or two nights is not. The taxpayer cost of supplying a victim with a radio alarm on a permanent basis may be prohibitive; the cost of rotating a small number of alarms from victim to victim during the high-risk aftermath of a recent incident is not.

Taken as a whole, the scientific literature on domestic violence seems to offer increasingly useful findings about the risk markers predicting repeat violence, at least without regard to level of injury. While an "early warning system" for serious events is not yet in sight, it remains conceivable. Prediction of no-injury events is quite well-advanced, and such findings could be used to educate victims at the scene as well as in more general education programs. The uses to which the prediction findings can be put are thus relatively clear, at least in terms of the paradigm's element of developing and testing new alternatives. And despite appearances to the contrary, that is even more true for the findings on the relative effectiveness of some current police actions to prevent domestic violence and homicide. Unfortunately, both questions still suffer from a widespread disjunction between science and practice.

Preventing Domestic Violence

The biggest scientific advance in policing domestic violence is its controlled experiments in preventing the recurrence of minor assaults. No other aspect of the "end product" of police practices has been subjected to such intense empirical testing, replication and debate. This intensity has led to a complexity of findings that some find perplexing, but which science treats as normal (Reiss and Roth 1993: 320). More important, it has led to unwelcome findings that some police actions actually increase the frequency of future violence among some offenders. Both these consequences of advanced science may be harbingers for the problem-solving paradigm in general. The ability of the paradigm to sustain its scientific focus may depend on its ability to handle these issues, perhaps in the manner suggested here.

Policing Suspect-Present Misdemeanor Domestic Assault. Over a decade of research on policing domestic assault suggests a clear conflict between punishment and violence prevention. This research shows that among some kinds of offenders, a custody arrest causes a substantial increase in the frequency of future domestic violence, even though arrest deters future violence among other kinds of offenders. While important questions remain about the generalizability of these findings beyond the four U.S. cities in which they were demonstrated, the research is squarely in the problem-solving paradigm of subdividing problems for different police responses. But the research results have also revealed the political limits of rational analysis.

The proposal to arrest misdemeanor domestic batterers came not from the police, but from victims' advocates. Through litigation and legislation, they argued that arrest would provide both deterrence and just deserts, sending a clear moral message that spouse abuse would not be tolerated. The first controlled experiment testing that argument, in Minneapolis, found evidence supporting the hypothesis--a finding that was readily adopted by the problem-oriented advocacy groups (Zimring 1989). But

subsequent experiments in other cities revealed a much more complicated picture. In three of the experiments (Omaha, Charlotte, Milwaukee) arrest showed at least some evidence of increasing future domestic violence across all cases (Dunford et al 1990; Hirschel et al 1990; Hirschel and Hutchison 1992; Sherman et al 1991b). In another three experiments (Miami, Colorado Springs, and the original Minneapolis experiment), there was at least some evidence of a specific deterrent effect from arrest (Pate, Hamilton and Annan 1991; Berk et al 1992; Sherman and Berk 1984; but see Garner, Fagan, and Maxwell 1995).

Further analysis showed that within four of the experiments the employed offenders were fairly consistently deterred by arrest, while the unemployed offenders committed up to twice as many future domestic assaults if they were arrested than if they were cautioned (Sherman and Smith, 1992; Pate and Hamilton, 1992; Berk et al, 1992).

The main theoretical issue in these findings is whether they reveal an individual-level or a neighborhood-level effect. Only the Milwaukee experiment has been analyzed on this question, but with very strong results. The effect of arrest in high-unemployment census tracts was generally to increase violence, regardless of the employment status of each individual offender. In areas of low unemployment, however, arrest deterred offenders in general, again regardless of the employment status of each (Marciniak 1994). These differences in arrest effects across neighborhoods were of equal or greater magnitude to the differences in arrest effects across employed and unemployed suspects. Such area-level contextual differences may also explain the differences in findings across cities, since the experiments varied substantially in the degree to which the sampled cases were concentrated in areas of extreme poverty.

Whether the effect of arrest varies by individual or neighborhood can have important policy consequences, given the legal and moral barriers to adopting different arrest policies for different kinds of people. Adopting different policies in different

neighborhoods, however, has a long tradition in at least American policing, and is especially resonant with the politics of "community" policing. Police decisions to make arrests in most cases of suspect-present misdemeanor domestic assaults are already widely variable across cities and states in the US, even though over fifteen states have passed mandatory arrest laws for suspect-present misdemeanor domestic assault.

The negative findings on arrest for some suspects have been made even more unpalatable by the failure of positive non-arrest alternatives, such as counselling or the issuing of emergency protection orders, to show any violence-prevention effects. Rather than allowing clear recommendations in favor of some alternatives to arrest, the program of six experiments was left with a less optimistic message of caution in the use of arrest in poverty areas.

Suspect-Absent Misdemeanor Domestic Assault. The seventh experiment, in Omaha, was more promising, especially in light of the difficulty victims historically face in obtaining arrest warrants. It was also the only experiment to date to address the 40% of domestic assaults in which suspects are absent when police arrived. Dunford (1990) arranged for the courts to waive fees and red tape in issuing warrants automatically upon police request when domestic batterers could not be arrested at the scene of the crime. Comparing all such "warrant" cases with "no-warrant" cases, the repeat offending rates were very different. The warrant group had less than half the frequency and prevalence of re-arrest on a new offense during the six month and one-year followup periods, suggesting that the 'sword of Damocles' effect of an unserved warrant may have a powerful effect on future behavior.

Whether these findings would emerge from replications of the experiment in other cities is a very important question which remains unanswered. But one controlled experiment on a hypothesis is far more evidence than is available on most other hypotheses that problem-solving police routinely treat as conclusions. However, since four experiments

showing arrest can backfire on unemployed offenders has been insufficient to produce a major change in police policy, the disjunction between science and conclusions remains quite large.

Untested Preventives. A leading untested police theory is that court orders to offenders to stay away from their victims are effective in preventing violence. Under pressure from victim advocacy groups, many police agencies encourage victims to obtain such orders. San Diego Police literature recommends such orders for all domestic violence victims, regardless of degree of injury or number of prior events. The main argument appears to be that offenders will be deterred by such orders into reducing the odds of future violence. Yet there are equally strong arguments that the orders will increase the frequency or seriousness of domestic violence (Sherman 1992).

Far less troubling, in theory, are the policies for removing guns found in plain view or during a consensual search of the premises. These policies have received increasing legislative support in the U.S. in recent years, supplementing longstanding informal practice. There is always the possibility that an offender will react so angrily to the loss of a firearm that he will obtain another one quickly and shoot the victim in revenge. But the risk of such a explosively defiant reaction seems small in relation to the risk of leaving the gun in the home at a period of high emotion--especially if the suspect is not arrested. This seems plausible at all levels of injury, including even arguments without threats.

Much the same can be said about battered women's shelters. It is possible to construct an argument about how a woman's leaving for a shelters might increase the risk of violence, and some offenders have indeed tried to find and attack sheltered women. Other victims have been attacked in hotels and at relative's homes. But it is just as plausible that these attacks would have occurred regardless of whether the victim stayed or left.

Restorative Justice. Perhaps the most theoretically appealing but still untested preventive is the Braithwaite and Daly (1994) proposal to employ a restorative justice approach. Based on Braithwaite's (1989) theory of reintegrative shaming and the police method, known as Conferencing, currently under evaluation in Canberra, the proposal employs the power of shame rather than legal sanctions to prevent future violence. The proposal may be especially important for communities of high social capital, found throughout Europe and Australasia, in contrast to the low social capital communities of concentrated poverty in the US cities where most of the domestic violence research to date has been done. The paradox of communities with high social capital is that they are places in which formal punishment may work the best (Sherman 1992), but where politics makes formal punishment (such as mandatory arrest) perhaps the least likely to be adopted.

As a more palatable alternative to prosecution in court, reintegrative shaming diverts a confessed offender to a conference attended by the victim as well as friends and family members of both the victim and the offender. The conference is led by a trained police facilitator who helps the group review the harm caused to the victim and the means by which the harm can be repaired. The theory of the conference is that the discussion will help the offender feel shame and remorse for the act he has committed. By allowing the offender to repair the harm and clear the debt, it enables the community and the victim to reintegrate the offender into responsible citizenship.

The most theoretically powerful aspect of these conferences may be the outcome agreements, in which offenders undertake certain commitments--the breaking of which can result in their prosecution. As in the Omaha offender-absent experiment (Dunford, 1990) the "sword of Damocles" effect may be at work and a similar long-term threat is created by restorative justice conferences.

As yet, police in Canberra have not used Conferencing in domestic violence cases, largely because of concern that the power imbalances among family members may be replicated in the conferences. Experience in the use of mediation and in family court proceedings indicate that such concern is legitimate. But because Conferencing seeks to mobilize extended family and others whom offenders respect to influence behavior, it may be that in certain kinds of domestic violence cases--those capable of classification through trial and error--this strategy actually works to reduce power imbalance rather than reproduce it. In any case, given the commonly low rates of prosecution of domestic violence arrests in the U.S., the potential for a police-administered treatment and restitution program seems well worth exploring. This is a prime example of the wide range of ideas still to be tested for police prevention of domestic violence.

Taxonomy and Science for Prevention. The evidence on prevention brings us full circle to the classification of domestic violence cases, and the value of exploring different alternatives for different kinds of cases. There is not enough science to provide recommended prevention practices for each major type of case. There is, however, enough science to offer a typology based on the subdivisions most relevant to prevention.

A Domestic Violence Taxonomy for Prevention Policies

<u>Type of Case</u>	<u>Police Actions</u>	
	Best Prevention	Evaluations
Serious Injury		
Offender Absent	Shelters, Alarms, Court Orders?	None
Offender Present	Custody Arrest	None
Violence, Minor/No Injury		
Offender Absent	Warrant For Arrest	One *
Offender Present		

Poverty area	Caution, shelter, separation	One **
Non-poverty area	Custody Arrest	One**
Off. unemployed	Caution, shelter, separation	Four***
Off employed	Custody Arrest	Four***
Threats, No Violence		
Offender Absent	Counsel Victim	None
Offender Present	Counsel Victim, Warn offender	None
No Threats or Violence		
Offender Absent	Counsel Victim	None
Offender Present	Mediate	None
Gun Present	Confiscate gun	None

* Dunford 1990

** Marciniak 1994

***Pate & Hamilton 1992, Berk et al 1992, Sherman & Smith 1992

This proposed taxonomy is a preliminary starting point, merely illustrative rather than exhaustive. It takes the single incident as the unit of analysis, rather than victims, offenders, or families and focuses primarily on uniformed patrol officers, since they still appear to do the most policing of domestic violence.

The broader question is whether any science will drive prevention programs, or vice versa. The lesson of domestic violence is that the field must be prepared for complexity, even while it seeks simplicity, of understanding what works. The temptations are clear: unrefined categories, logically sloppy predictions, and rejection of politically incorrect evaluation results. Yet to a large degree the field as a whole has met these problems head- on, and made substantial strides. Absent external pressure to transform policing into a scientific culture, a slow accretion of science seems to be the most likely future. The most likely way to speed that process up may be to better measure the bottom line.

Measuring Domestic Crime: Police Activities Versus Results

The greatest problem facing the problem-solving paradigm is the measurement of crime prevention results (Sherman 1991). This is particularly true of crimes like domestic violence with highly variable reporting, and even variable definitions. Like some other criminal offense categories, greater confidence that reporting domestic violence to police will have a beneficial effect may by itself lead to higher levels of reporting. Moreover, police decisions to record domestic violence events may be increased, relative to the number of eligible incidents they encounter, under programs giving crime prevention a higher priority (see Ferrante et al 1996: 44). Reports may even be taken when no violence has occurred. These factors make the measurement of police effectiveness extremely problematic with existing data systems. The only immediate solution may be an alliance between police and medical institutions for measuring trends in levels of traumatic injury to women.

The need for better measurement is clearly demonstrated by President Clinton's announcement that San Diego Police had reduced domestic homicides by 50% (White House Press Release June 20 1996), from 18 in 1990 to about 9-10 since 1993. These data were presented to show the success of the domestic violence investigation unit (DVIU), which was created in 1992 with some 1% of the SDPD sworn officers. Official statistics of the Department as determined by the homicide squad, however, show 8 domestic murders in 1990 and about 10 each year since 1993 - essentially no change since the DVIU was created.

It is possible that both sets of statistics may, in some sense, be "right." Differences in FBI counting rules for crime clearance and local categories for problem solving, for example, could put unsolved cases on one side or the other of the domestic violence

boundary, or there could be differences in how events are classified by year of death or of attack. The more basic problem is using such small numbers at the top of a huge pyramid of seriousness to measure the effectiveness of a unit addressing some 14,000 domestic cases a year. Chance differences in medical care alone could produce a difference of five or ten homicides a year in a city of 1.3 million people. A more reliable measure of trends in domestic violence would be found further down the pyramid of seriousness.

Unfortunately, the only other measure SDPD offers is perhaps too far down the pyramid of seriousness. Both total domestic calls and domestic calls involving firearms have been counted there since at least 1989. A measure of the effectiveness of a domestic violence program adopted in 1992 might be the impact of the program on the long-term trends in these measures. Both the total domestic calls and calls involving guns moved in very similar trends, rising steadily since 1989 and almost doubling by 1995. There is no evidence of any decline in either trend since 1991 or 1992. Based on these data, the domestic violence problem in San Diego appears to be getting worse, not better.

Yet the call data may well be reactive to police prevention efforts. The more police educate victims not to tolerate violence, the more calls for help they should get. Based on that assumption, as well as the training program in the early 1990s, the data show their education efforts have been very successful. But any measure that defines success by an increase in the size of a problem cannot have any long-term value. What is needed is a measure of domestic violence independent of public confidence in police, and of public visibility of police efforts to attack the crime problem.

Whatever the ideal measures might be, the San Diego data reveal the depth of the measurement problem. San Diego is widely reputed, quite properly, to be the agency most advanced in its use of the problem-solving paradigm. The fact that it apparently does not or cannot employ reliable performance measures on domestic violence

prevention says volumes about the current state of the paradigm. The paradigm is founded on the "end product" results of policing, yet no one is measuring those results. Despite Goldstein's critique of "means over ends" performance measurement, policing still spends far more effort counting its activities (like arrests and calls for service answered) than counting the results of those activities (like crimes prevented). This is tantamount to General Motors measuring success by the number of cars it produces, rather than by its profits from the excess of revenues over costs.

This problem is compounded by public ambivalence over the end product of policing. The confusion of punishment with crime prevention often leads to arrest and prosecution being labeled the end product, regardless of its effects on crime. For some victim advocacy groups and many police officers themselves, the mission of policing is just deserts, not crime prevention. Nowhere is this more evident than in the debate over mandatory arrest for misdemeanor domestic violence incidents.

Multi-Agency Measurement: Medical Data for Police Effectiveness. The foundation for better science in domestic violence prevention may lie in yet another theme of problem-oriented policing: multiagency collaboration. It seems likely that the most reliable data presently collected about domestic violence is to be found in medical records. There is a substantial medical literature on the measurement and estimation of domestic violence from emergency room admissions, and other medical records (such as inpatient, clinic or general practitioner data) may also be useful. Yet it also seems likely that a combination of medical and police data could be even more helpful for a multiagency effort to predict and prevent serious violence.

The general call for integration of public health and criminal justice has been well-articulated (Moore et al 1993; Moore 1995), despite the legal and ethical difficulties which might be involved. The specific benefits of policing and medicine pooling their data resources on this problem include far more fine-grained classification of level of seriousness and type of injuries, as well as a far wider basis for prediction. It is possible,

for example, that a merger of police and medical data could provide a more precise description of high risk factors for escalation in seriousness of injury or death. It is also possible that police could measure the effectiveness of specific interventions on the basis of future medical indicators of recidivism, rather than of police indicators. Much of the debate about the interpretation of the domestic violence arrest experiments in the U.S., for example, would have been avoided if medical data had been available as an outcome measure.

A hidden benefit of such a partnership might be the spread of scientific culture from medicine into policing, with an informal osmosis of systematic hypothesis testing. Building on a common interest in prevention as the goal, the public health-policing partnership could create a steadily growing body of knowledge about what works and what doesn't to prevent recurrent injury from domestic violence as measured by medical data. It was not very long ago that medicine itself was drifting in undocumented craft lore, and only recently that it became anchored to the more rigorous accountability of science (Pocock 1983). While some may regret the full consequences of "high science" in medicine, the alternative seems unattractive: no polio vaccine, widespread tuberculosis, smallpox, and other plagues might otherwise still be with us. Whether policing can ever use science to achieve similarly dramatic results remains to be seen. But the model of medicine suggests it can only happen slowly, and then only by general acceptance of the scientific method within the profession.

Conclusion

As a guide to problem-solving for crime prevention in general, policing domestic violence is an important case study. On the surface, it is a story of hypotheses and policies, theories and data, encouraging findings and sobering replications. Yet underlying all of these developments is the common problem of measurement. Lord Kelvin's dictum may therefore offer the most general lesson for problem-oriented

policing: "When you cannot measure, your knowledge is meager and unsatisfactory."

Weaknesses in classification and counting may thus cripple efforts to enhance prediction and prevention.

Yet measurement alone will not make problem-oriented policing realize Goldstein's vision for what it could achieve. A cultural evolution in policing must develop to support the scientific revolution of the problem-solving paradigm. This cultural evolution can move forward most rapidly by a growing partnership between police and criminologists or other professional scientists, such as the public health community in the case of domestic violence. This growing cultural exchange can help clarify the distinction between activities and results that still eludes so many police agencies. With better measurement of the target crime problems, the partnership of policing and science can substantially broaden the use of trial and error methods for crime prevention.

Working together, they can experiment more rigorously not only with traditional law enforcement methods like arrest, but stretch their imaginations to think creatively about all the options police have at their disposal. In the case of domestic violence, this could range from portable alarms to restorative justice conferences. With a strong scientific design for experimentation, even the most radical innovations can be justified on the grounds that it may provide a more effective means of prevention.

No matter what the crime problem, better measurement and an evolving culture of scientific thought are essential to improved crime prevention. Otherwise, police will go on collecting crime data that are never analyzed, make predictions that are wrong far more often than right, and perhaps use methods of crime "prevention" that actually increase crime. Until the goals and objectives of police activities become far more explicit and measurable by the canons of science, problem-solving will be honored more in the breach than in the observance.

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