

# **The Efficacy of Strategies to Reduce Juvenile Offending**

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**Justice Modelling @ Griffith (JMAG)**

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## Executive Summary

The purpose of this report was to examine the national and international research literature relating to the efficacy of a range of strategies to reduce juvenile offending. These strategies were categorised according to Tonry and Farrington's (1995) framework of four groupings of crime prevention strategies: (i) developmental and early interventions, (ii) law enforcement and criminal justice approaches, (iii) community crime prevention, and (iv) situational crime prevention (SCP). Specifically, the Tender Document (Appendix 1, p. 167) asked the consultants to:

- (i) Summarise the strategies that are available to reduce juvenile offending/recidivism as identified by Tonry and Farrington (1995).
- (ii) Examine the key features of programs that have been implemented within each strategy.
- (iii) Explore the evidence base of each strategy by examining the effectiveness of programs in terms of reducing juvenile offending/recidivism.
- (iv) Note the cost of programs and outcomes of any cost-benefit evaluations that have been undertaken (if available).
- (v) Comment on the feasibility of conducting meta-analyses on the various program options.
- (vi) Based on available evidence, provide a summary of the effectiveness of each strategy.
- (vii) Where possible, provide an assessment about the effectiveness of programs for Indigenous young people.

Studies included in the review were based on the researchers' knowledge about intervention programs that had been undertaken, recent reviews that had been conducted, and a search of websites that contained some Australian evidence. Research incorporated in the review was focused on preventing juvenile offending and was scientifically robust, usually having a treatment and control group. While focus was placed on interventions that reduced juvenile offending, many interventions discussed are also likely to result in reductions in adult offending. This is not surprising given the high proportion of young people who initiate offending during their teen years which continues into adulthood (Chen, Matruglio, Weatherburn, & Hua, 2005; Hua, Baker, & Poynton, 2006). It must be acknowledged that while this review focuses on preventing the initiation of offending and recidivism, there may be other positive outcomes to intervention programs. Examining these other outcomes was beyond the scope of this review.

A consistent theme throughout this report is the lack of scientifically rigorous Australian research to determine the efficacy of the interventions examined. In Chapter 1, an overview of the methodologies that have been employed to evaluate programs is provided. While systematic reviews and meta-analyses have been conducted on developmental/early intervention and criminal justice approaches, there was little evidence of the evaluations in other areas reaching the standards required for meta-analyses. For our knowledge of ‘what works’ in preventing juvenile offending and re-offending to advance, it is imperative that programs are rigorously evaluated.

### **Efficacy of Strategies at Preventing Juvenile Offending**

The four main approaches to reducing offending/recidivism identified by Tonry and Farrington (1995) are developmental and early intervention, law enforcement and criminal justice approaches, community crime prevention, and situational crime prevention. While law enforcement and criminal justice strategies are implemented after a crime has been committed, the other three strategies occur before an offence is committed.

Developmental or early intervention programs focus on developmental risk and protective factors and target young people most at-risk of developing anti-social behaviour. While the efficacy of such programs could be improved by identifying risk factors that are highly related to delinquency or particular types of delinquency and identifying an optimum time to intervene rather than intervening early in life, this approach is promising and may be viewed as having the strongest evidence base. This is primarily because such programs have been evaluated using random controlled trials and the findings of studies therefore have high internal validity. Meta-analyses conducted by the Washington State Institute for Public Policy (2001, 2004, 2006) and Farrington and Welsh (2003) indicated that these programs reduced recidivism by about 15%. An examination of eight early intervention and developmental programs found that one program resulted in short-term reductions in offending, while seven resulted in long-term reductions by between 18% and 91%.

Law enforcement and criminal justice strategies are implemented after a crime has been committed and operate both directly through deterrence, incapacitation, and rehabilitation and indirectly through the effects of socialisation. While more methodological rigorous research is required, evidence suggests that fourteen types of interventions based on these strategies may reduce offending, including: (i) multidimensional treatment foster care, (ii) adolescent diversion project,

(iii) family integrated transitions, (iv) functional family therapy, (v) aggression replacement training, (vi) teen courts, (vii) interagency cooperation programs, (viii) restorative justice for low risk offenders, (ix) juvenile drug courts, (x) counselling/psychotherapy, (xi) education programs, (xii) other family-based therapy programs, (xiii) team child, and (xiv) behaviour modification programs. Additionally, mixed evidence was found for the efficacy of multi-systemic therapy.

Community crime prevention involves interventions that change the social conditions that influence offending. Unfortunately, most interventions adopted within this approach have not been subjected to rigorous scientific evaluations to determine their impact on offending. This is partly because of the significant challenges that must be faced when attempting to determine the impact of such programs, such as difficulties determining spatial boundaries and the complexity of many programs. Additionally, the value of such evaluations may be questionable as there is considerable heterogeneity in characteristics across communities, which reduces the external validity or transferability of findings. Nevertheless, the most successful community programs appear to be those that address multiple needs or deficits within communities and those that are implemented in communities that initially have higher levels of cohesion. Evidence suggests that community economic development interventions, mentoring programs, job/vocational training programs, weed and seed programs, and recreation interventions may reduce delinquency. There is insufficient evidence to determine whether community policing, community mobilisation, or school/after-hours programs reduce delinquency. Evidence indicates that Neighbourhood Watch (a form of community mobilisation) and removing criminogenic commodities are not effective at reducing delinquency.

SCP strategies focus on the immediate environment where crime is committed and aim to reduce the opportunities for crime. The scientific study of the efficacy of SCP techniques has begun to focus on what techniques are effective based on the purpose of particular locations. Findings indicate that while a few techniques 'work' or are viewed as 'promising', the efficacy of most techniques remain 'unknown' due to inconsistent findings. Many of the interventions reviewed were one-off case studies examining the impact of techniques or multiple techniques in one site over short periods of time. Evidence suggests that SCP techniques can result in reductions in crime. Consequently, problem-solving approaches appear to be promising in producing meaningful reductions in offending, where problems are first identified and interventions are then designed and implemented to deal with those problems.

Overall, the findings suggest that developmental and early intervention approaches are promising and that there is considerable potential for the juvenile justice system to adopt treatment and rehabilitative interventions and have a positive impact on the lives of young offenders. Interventions based on community crime prevention, situational crime prevention, and law enforcement and criminal justice system approaches need to be tailored to the needs of communities, situations, and individuals. No one intervention will be appropriate for all communities, situations, or delinquents.

Generally, the review highlights the importance of targeting intensive and costly interventions towards those most at-risk of offending or recidivism, as these interventions are likely to be most cost-effective. Examples of such interventions include early intervention programs and rehabilitation and treatment programs. Situational prevention techniques also appear most promising when directed at highly specific problems within particular locations. Other forms of intervention such as diversion through cautioning and conferencing appear most promising when targeted towards first time or low risk offenders. Community crime prevention programs appear most promising when they target multiple needs or deficits within communities and when communities have higher levels of cohesion before program implementation.

### **Programs for Indigenous Young People**

The review of the literature highlights the lack of research that has explored the efficacy of interventions for reducing Indigenous offending/recidivism. Although Indigenous offenders are over-represented in all stages of the juvenile justice system, few studies have explored the efficacy of programs for Indigenous young people. In part, this is because most of the research that has explored the efficacy of interventions is international. Additionally, scientifically rigorous research differentiating young people based on ethnicity may not have been conducted because this information or data were not collected. For example, it only became mandatory for agencies and departments in Queensland to collect information about Indigenous status in January 2003.

Of the few studies that have examined Indigenous status, evidence indicates that Indigenous young people are less likely than non-Indigenous young people to be referred to diversionary processes (cautioning and conferencing) and those that are diverted appear to have a greater risk of re-offending (Polk et al., 2003). Evidence also indicates that Indigenous young people are under-represented in treatment programs and do not respond well to interventions (Day et al., 2003).

While more research is required, it has been suggested that mentoring programs are likely to be effective for Indigenous young people and that culturally specific treatment programs need to be developed (Wilczynski et al., 2003). It has been argued that Indigenous offenders are likely to have higher levels of criminogenic and non-criminogenic needs when compared to other groups of offenders and that treatment programs and interventions need to target culturally specific needs (Day et al., 2003). The factors that may be relevant to the needs of young Indigenous offenders may include: alienation in the predominantly non-Indigenous Australian justice system, the relatively young age of Indigenous offenders, the isolation of young people due to their geographical separation from family/cultural group, the transitory nature of support systems, lower levels of functional literacy, specific health needs, the high profile of Indigenous individuals upon release, the social status of offending among peers, and the difficult circumstances encountered upon release (Day et al., 2003, p. 74).

### **Cost-Benefits of Strategies**

Evidence indicates that there are a number of potentially cost-effective interventions to reduce juvenile offending. Early interventions are likely to result in cost-savings when the benefits for taxpayers in reduced criminal justice system costs and for crime victims are taken into account, although only if such programs are appropriately targeted towards those most at-risk of offending. Several criminal justice interventions have been found to reduce recidivism and result in savings for taxpayers, most notably diversion through the use of “change agents”, functional family therapy, family integrated transitions, aggression replacement training, and multi-systemic therapy. Other promising interventions in terms of cost-effectiveness include multi-dimensional foster care, interagency coordination programs, restorative justice for low-risk offenders, and juvenile drug courts. Additionally, interventions that are used as a direct alternative to incarceration are likely to result in savings, regardless of whether they reduce recidivism (i.e.: juvenile boot camp to offset institutional time and intensive probation as an alternative to detention).

### **Conclusions**

There is a clear need for more scientifically robust research to determine whether interventions implemented in Australia are effective at reducing juvenile offending. The evidence about the efficacy of developmental and criminal justice interventions is mainly from the United States and United Kingdom and while findings appear promising, whether these interventions would be effective at reducing juvenile offending in Australia remains largely unknown. Determining the

efficacy of interventions based on community crime prevention and situational crime prevention is more problematic, as these are problem-focused approaches that do not lend themselves easily to replication and evaluation. Given the lack of Australian research, it is not surprising that few studies have been able to examine the impact of interventions on offending by Indigenous young people. Such research is urgently required given the gross over-representation of Indigenous young people in the justice system.



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# Chapter 1. Introduction

In 2006, the Department of Communities (DoC) sought the advice of Justice Modelling @ Griffith (JMAG) about a project *Costs, Savings and Benefits of Prevention, Early Intervention and Diversion of Young People Aged 10-24*. This project was divided into three smaller projects:

- (i) Understanding initiation of offending and recidivism across the juvenile and adult justice systems,
- (ii) Determining the direct costs of processing young people through the juvenile justice system, and
- (iii) The efficacy of strategies to reduce juvenile offending.

The findings of the literature review examining the efficacy of a range of strategies that may be used to reduce the initiation of juvenile offending or recidivism are presented in this report. These strategies are categorised as:

- Developmental or early intervention,
- Community crime prevention,
- Situational crime prevention, or
- Law enforcement and criminal justice strategies (Tonry & Farrington, 1995).

The first three of these strategies occur before an offence is committed and reduces the likelihood of crime occurring. Developmental interventions reduce the likelihood of an individual committing crime by focusing on developmental risk and protective factors. Community crime prevention focuses on interventions that change the social conditions that influence offending. Situational crime prevention strategies focus on the immediate environment where crime is committed and aims to reduce the opportunities and increase the risks for potential offenders. Law enforcement and criminal justice strategies are implemented after a crime has been committed and operate both directly through deterrence, incapacitation, and rehabilitation and indirectly through the effects of socialisation.

Robust evaluation is essential for understanding the effectiveness and economic efficiency of social policies and programs. Such evaluations raise the level of dialogue surrounding an issue and promote informed decision making about future policies and programs (Canadian Health Services Research Foundation, 2004). Evaluations provide decision makers with the knowledge required to

direct scarce government resources to interventions that have proven effective at reducing offending in the past and done so in a cost-effective manner. While evaluation of public policies and programs aimed at reducing juvenile offending is reasonably established in countries such as the United States, Australia has a comparatively weak ‘culture of evaluation’.

## **1.1. Evaluation Techniques**

Before examining the efficacy of crime prevention strategies, it is important to give a brief overview of the methodologies that have been employed to evaluate previous programs. This section will provide a discussion of the main methods that have been used to assess the impact of programs and factors that impact on the internal and external validity of findings. Additionally, it will outline how ‘offending’ has been used as an outcome measure and highlight some important aspects to note when assessing the findings of cost-benefit analyses. The role of systematic literature reviews and meta-analyses in providing an evidence base for policy makers will also be examined.

### ***1.1.1. Methods Used to Evaluate Program Impact***

Despite the large financial investment in programs aimed at reducing offending, there have been relatively few scientifically strong impact evaluations. Impact evaluations measure and compare program outcomes with the outcomes that would have resulted had the program not been implemented (Greenwood, 2006; Hoge, 2001; Lipsey, Adams, Gottfredson, Pepper, Weisburd, Petrie, & Patterson, 2005). In practice, it is difficult to determine what would have occurred had a particular program not been implemented as outcomes are not observable. There are, however, a range of methods that may be used to give a credible estimate of what would have occurred had the program not been implemented. These methods may be classified as adopting a randomised experimental, quasi-experimental, or non-experimental design.

The randomised controlled experiment is viewed as the “gold standard of evidence” (Greenwood, 2006). Randomised controlled experiments involve the random assignment of individuals to either receive the intervention or to not receive the intervention. As individuals are randomly assigned to treatment and control groups, the groups can be viewed as being similar in all respects except that the treatment group receives the intervention. Therefore, any differences found between the groups

in outcome measures can be interpreted as intervention effects (Greenwood, 2006; Lipsey, et al., 2005). Given that many interventions adopted to prevent offending do not randomly assign individuals to treatment and control groups because of ethical and practical considerations, an alternative approach that may be used to explore the impact of programs involves adopting a quasi-experimental design.

Quasi-experiments compare selected cases “receiving an intervention with selected cases not receiving it, but without random assignment” (Lipsey, et al., 2005, p. 36). There are three types of quasi-experiments. In the most common type, “an intervention group is compared with a control group that has been selected on the basis of similarity to the intervention group” (Lipsey, et al., 2005, p. 36). A second type of quasi-experiment involves a time-series design. Time-series designs compare a series of observations on an outcome measure before a program was implemented with the observations for a period of time after the program was implemented. The third type of quasi-experimental design combines non-randomised comparison groups with time-series observations and typically examines a series of outcome measures before and after program implementation and includes a control location (Lipsey, et al., 2005).

Non-experimental designs may also be used to assess program impact. These evaluations do not involve the use of a comparison group but rather use panel designs and simple before-and-after comparisons. While non-experimental designs are the easiest to conduct, outcome measures are more susceptible to being influenced by factors other than the intervention. Furthermore, evaluations based on non-experimental designs have been shown to systematically over-estimate the positive effects of intervention programs (Weisburd, Lum, & Petrosino, 2001).

### ***1.1.2. Internal and External Validity of Findings***

Before a program that has been successful in one jurisdiction is implemented elsewhere, it is necessary to assess the methodological quality of the research and the generalisability of the findings. Assessments about the methodological quality of research designs are essential because such assessments relate to the level of confidence that can be attributed to the observed treatment effects (McGuire, 2003). Internal validity refers to the extent that the relationship between two variables in a research design is casual (McGuire, 2003). More confidence can be held in the findings of randomised controlled experiments because this design has high internal validity.

While the various strategies aimed at reducing offending are not designed to a single standard, they are based on theoretical assumptions such as the benefits that result from intervening early in developmental pathways. Whether a program that has demonstrated efficacy in one jurisdiction will produce similar benefits in another jurisdiction cannot be known for certain and raises the issue of external validity (Karoly, Greenwood, Everingham, Hoube, Kilburn, Rydell, Sanders, & Chiesa, 1998). External validity refers to the extent that a relationship found in one place can be generalised to different populations, places, or times (McGuire, 2003, p. 12). This requires the replication of programs in other jurisdictions and further impact evaluations to determine whether the findings relating to the program are consistent in other contexts. Generally, interventions that have been subjected to more evaluations can be said to have higher external validity (Washington State Institute for Public Policy, 2001). As many programs and interventions have not been sufficiently replicated, the external validity of findings remains questionable.

A related issue is whether many of these programs would produce benefits if replicated on a large-scale. The ability of small-scale model programs or one-off case-studies to be rolled-out has been questioned in what is referred to as the “scale-up” issue (Karoly et al., 1998). The concern is that publicly administered programs in a diverse range of communities will not replicate the model programs due to inadequate funding, the inability to locate staff with similar training and stake in the outcomes, and because additional issues must be faced such as maintaining consistency across program sites.

### ***1.1.3. Offending as a Measure of Impact***

As a reduction in offending is a common outcome measure of many programs, it is necessary that impact evaluations operationalise this concept. One method that may be used to assess offending involves conducting self-report crime surveys with those involved in the study. Given the considerable cost of conducting surveys, officially recorded interactions that people have with the justice system are often used as a proxy for offending. Measures that have been used in previous research to assess offending include arrest, felony arrests, convictions, serious or felony convictions, and finalised court appearances. It should be noted, however, that official records do not capture the proportion of crime that is not reported, may represent more serious cases, and may

over-represent those with a low socio-economic status because of bias in agency activity (Brown, 1984; Widom, 1989).

Most studies focus on whether there has been a reduction in the frequency or rate of offending, although different follow-up periods have been adopted. The issue of when outcome measures such as offending should be assessed is mainly dependent on the nature of the program and perceptions about when the benefits of programs are likely to appear. As the benefits of developmental programs are usually not expected until the young person is older, follow-up evaluations often need to be conducted well after participant's complete programs. Conversely, as the effects of situational crime prevention are more immediate, shorter follow-up impact evaluations may be appropriate. Nevertheless, an argument can easily be made for having longer-term impact evaluations as the positive effects of interventions may not be fully recognised or may fade over time.

Fewer studies explore whether programs have had an impact on offence seriousness or time to re-offence. While it is important to determine whether there has been an overall reduction in offending, this does not capture other beneficial outcomes that may result from interventions. One such outcome is that there may be a reduction in the seriousness of offences. Another outcome may be that there is a greater length of time before an offence is committed. Given that the data used are frequently censored, statistical techniques such as survival analysis are frequently employed to determine whether programs have had an impact on time to re-offence.

#### ***1.1.4. Cost-Benefit Analyses***

Given the importance of economic efficiency, some programs have been subjected to cost-benefit analyses. These analyses seek to determine whether programs pay for themselves over time and examine return on investment. Two important issues that should be considered when examining such assessments are when they were undertaken and what benefits were included. The specific time when an assessment is conducted will impact on the final outcome as the greater length of time allowed between the program and cost-benefit analysis, the more likely it is that the program will be cost-effective (Karoly et al., 1998). One of the most common problems with cost-benefit analyses is determining where to draw the line when assessing the benefits derived from programs. It is common for evaluations to focus on tangible taxpayer savings resulting from programs such as reduced criminal justice system costs, while some also include victim cost savings. Importantly,



cost-benefit analyses rarely incorporate all benefits such as reduced future welfare costs and many benefits such as improved quality of life are not included because they are intangible.

### *1.1.5. Systematic Literature Reviews and Meta-Analyses*

Given the limitations associated with determining the impact of interventions and threats to the validity of findings particularly from non-randomised experiments, systematic literature reviews often including meta-analysis are frequently conducted to provide an evidence base for practitioners so that they can make informed decisions. A systematic review is an unbiased, highly structured, and comprehensive review of a particular subject area that provides adequate details about the methodology employed to conduct the review so that it can be replicated (Perry, 2006).

According to Farrington and Petrosino (2001), systematic reviews have several important features, including: (i) explicit objectives for conducting the review, (ii) explicit eligibility criteria concerning the inclusion of studies or articles, (iii) an unbiased methodology for searching for studies for inclusion in the review, (iv) individual screening of each study or article to ensure that it meets the inclusion criteria, (v) a complete collection of data is collected for each study when possible, (vi) quantitative data analysis techniques such as meta-analysis are used when possible, and (vii) the report is highly structured and detailed and explains each stage of the review process as well as the final conclusions drawn.

Importantly, a systematic review may or may not include statistical analyses such as meta-analysis. A meta-analysis is a statistical procedure that amalgamates, summarises, and reviews previous quantitative research. Essentially, conducting a meta-analysis involves combining the data from previous research into a new database and undertaking analysis of this new database. While this enables an objective analysis of what is known on a topic, one pitfall is that constructs may become imprecise. The findings from meta-analyses are reported in terms of effect size which summarises how much change is evident across all studies. According to Cohen (1998), a standardised effect size of zero means that there was no change, 0.2 indicates a small change, 0.5 indicates a moderate change, and 0.8 is indicative of a large change. Alternatively, Wolf (1986) suggests that 0.25 is significant and .50 is clinically significant.

## 1.2. Search Strategy and Review Process

Despite the attractiveness of systematic literature reviews, this project limited its assessment to studies that had been published in English, were publicly available, and did not involve the re-analysis of primary data. Rather than being a systematic review, the studies that were included in the review were based on the researcher's knowledge about intervention programs that had been evaluated and an examination of the literature focusing on recent reviews that had been conducted. Several past reviews and meta-analyses had been undertaken, including:

- Evidence-Based Public Policy Options to Reduce Future Prison Construction, Criminal Justice Costs, and Crime Rates (Washington State Institute for Public Policy, 2001, 2004, 2006).
- Interventions to Reduce Anti-Social Behaviour and Crime: A Review of Effectiveness and Cost (Rubin, Rabinovich, Hallsworth, & Nason, 2006).
- Preventing Crime: What Works, What Doesn't, What's Promising (Sherman, Gottfredson, MacKenzie, Eck, Reuter, & Bushway, 1997).
- Effectiveness of Family-Based Programs to Prevent Delinquency and Later Offending (Farrington & Welsh, 2003; Welsh & Farrington, 2006).
- Meta-analyses of specific situational crime prevention techniques such as improved street lighting (Welsh & Farrington, 2002), closed circuit television surveillance (Farrington & Welsh, 2002), and hot spot policing (Braga, 2005).

Additionally, several websites were searched including those maintained by the Home Office (UK), Bureau of Crime Statistics and Research (NSW), Office of Crime Statistics and Research (SA), and Australian Institute of Criminology. In reviewing the literature, focus was placed on examining the efficacy of strategies that aimed to reduce juvenile offending. Like most contemporary reviews, this review only included research that was scientifically robust and had a treatment and control group. Additionally, the review was limited to strategies aimed at preventing juvenile offending.

### **1.3. Life Course Perspective and Context of Interventions**

While this review was focused on juvenile justice interventions, the efficacy of such interventions can only be understood with some understanding about how crime develops over the life-course. In the contemporary field of criminology, where life course developmental perspectives currently dominate as the primary framework for understanding criminal offending, studies of criminal recidivism have the potential to uncover critical information on the patterns of criminal offending of individuals over the course of their lives (Blumstein, Cohen, Roth, & Visher, 1986; Cain, 1997; Carcach & Leverett, 1999; Chen et al., 2005; Farrington, 2003; Lynch, Buckman, & Krenske, 2003). As described by Farrington (2003, 2007), Developmental and Life course Criminology (DLC) is focused upon the goals of attempting to understand the development of offending and antisocial behaviour, risk factors across different ages, and the effects of life events on the course of development. The approach focuses on changes in offending over time, including onset or initiation, termination or desistance, and duration or career length of offending (Blumstein, Cohen, & Farrington, 1988; Farrington & West, 1990).

DLC has produced a substantial amount of theorising, and thus significant divergence and heterogeneity in concepts and processes argued to account for and explain the development of offending across the lifespan (Farrington, 2003; Sampson & Laub, 2005). Broadly speaking, developmental approaches view the life course as a series of phases, a series of points of change, a series of transitions, rather than a fixed progression towards adulthood determined by factors early in life (Elder, 1994; National Crime Prevention [NPC], 1999). This approach focuses upon pathways with a multitude of outcomes, and aspects of time and timing of life events and transition points in order to understand developmental outcomes (Elder, 1994; NPC, 1999). This perspective has the potential to inform research on offending behaviour, including the differences over time both within and between individuals, in an effort to understand both how and when to intervene (Carcach & Leverett, 1999; Marshall, 2006). In particular, the study of offending pathways for juvenile offenders is critical to our understanding of the development of offending behaviour, especially the links between juvenile and adult offending, given the international research that supports the popular conception that adult offenders typically begin their criminal careers in the juvenile years (Benda, Corwyn, & Toombs, 2001; Carcach, 1999; Chen et al., 2005; DeLisi, 2006; Mason & Windle, 2001; Piquero, Brezina, & Turner, 2005).

The DLC perspective has extended the notion of criminal careers (Blumstein et al., 1986) to include exploration of how the dynamic nature of risk factors or changes that occur over the life-course are related to particular offending pathways (Farrington, 2003; Marshall, 2006; NPC, 1999). Research examining the developmental pathways of offenders in an Australian context is rare (however, see Marshall, 2006; Livingston, Stewart, & Allard, under review). This is problematic, given that interventions should be informed by empirical research based on the population in question and the characteristics of individuals at high risk for future offending and their developmental pathways.

Developmental trajectories refer to changes experienced by individuals over the life course or a relatively long period of time (Nagin & Tremblay, 2005a). A trajectory refers to a pathway of development over the life course referring to long-term patterns and sequences of behaviour (Sampson & Laub, 2005). The analysis of developmental trajectories in such fields as criminology and psychopathology provides researchers with the ability to understand the development of non-normative behaviour over the life course. It allows researchers to examine the pathways of adaptation and non-adaptation that individuals follow to arrive at particular outcomes, in an effort to examine longitudinal patterns of behaviour (Chung, Hill, Hawkins, Gilchrist & Nagin, 2002; Kokko, Tremblay, Lacourse, Nagin & Vitaro, 2006; Wiesner, Kim & Capaldi, 2005). Recent innovations in statistical modelling techniques, including Semi-Parametric Group-based Modelling (SPGM; Nagin, 1999; Nagin & Land, 1993), and Latent Growth Mixture Modelling (LGMM; Muthén & Muthén, 2000) have provided DLC researchers with the tools to model heterogeneity and homogeneity across offending trajectories (D'Unger, Land, McCall & Nagin, 1998; Nagin & Tremblay, 2005b; Nagin & Tremblay, 1999; Piquero, 2007; Wiesner, et al., 2005). Such developments are vital in order to advance our knowledge of the factors associated with different offending trajectories across different points in the life-course, and thus inform the construction of interventions to reduce or prevent antisocial behaviour.

Piquero (2007) reports that over 80 studies have utilised trajectory modelling techniques that vary according to the context the data was derived from and characteristics of the samples studied. Therefore, it is difficult to integrate the findings across trajectory modelling studies due to the wide variations in such characteristics as the age range of samples, length of follow-up measures, dependent measures, and analytic strategies and decisions (Piquero, 2007). Numerous explanatory factors have been used in an attempt to explain the heterogeneous offending patterns that modelling techniques have identified. These include factors such as family interactions, peer group, marriage,

and unemployment, which are viewed as having an impact at different stages of the life-course (Farrington, Gallagher, Morley, Ledger, & West, 1986; Fergusson, Horwood, & Nagin, 2000).

In recent years, several major longitudinal studies have been carried out in the United Kingdom (Piquero, Farrington, & Blumstein, 2007; Jones, Nagin, & Roeder, 2001), United States (Chung et al., 2002; Piquero, Brame, Mazerolle, & Haapanen, 2002), Canada (LaCourse, Nagin, Tremblay, Vitaro, & Class, 2003) and New Zealand (Fergusson et al., 2000). This research has found that:

- Offending peaks in the late teenage years.
- The peak onset age of offending is between eight and 14.
- The peak desistance age of offending is between 20 and 29.
- The process of desistance operates across all offenders.
- Early age of onset predicts a relatively long criminal career duration and the commission of relatively many offences.
- There is marked continuity in offending and anti-social behaviour from childhood into adulthood.
- A small proportion of the population commit a large proportion of all crimes.
- Different types of offences are committed at distinctly different ages.

Importantly, there is a moderately strong and consistent positive association between past and future criminality, where individuals with prior offences are much more likely to commit future offences when compared to those with no prior offences (Nagin & Paternoster, 2000). Further, there is a small proportion of offenders who account for relatively high proportions of offences. This group begins offending early in life, at high rates, and persists at relatively high rates when the norm (in terms of the aggregate age-crime curve) seems to be desistance from offending. Additionally, research indicates that desistance from offending is a common occurrence as individuals age, even for chronic groups, although they desist offending at later ages and at lower rates (Laub, Nagin, & Sampson, 1998; Piquero, 2007; Piquero et al., 2002; Sampson & Laub, 2003a, 2003b).

There exists significant debate in terms of how best to account for the continuity of criminal behaviour over the life-course, which is best conceptualised by the divergence between population heterogeneity and state dependence theories (Nagin & Paternoster, 2000; Paternoster, Dean, Piquero, Mazerolle, & Brame, 1997). Population heterogeneity theories conceptualise the continuity in criminality as a static process resulting from an underlying propensity or proneness to commit crime that is established early in life (Cernkovich & Giordano, 2001; Nagin & Paternoster, 2000; Paternoster et al., 1997). State dependence theories conceptualise continuity in criminality as a dynamic process resulting from a process of contagion, when criminal or non-criminal behaviour

transforms life conditions and alters the probability of future offending (Nagin & Paternoster, 2000). This view emphasises the variable nature of criminality over time and the cumulative effects that various factors may have on offending at different points in the life course (Cernkovich & Giordano, 2001; Ezell, 2007; Nagin & Paternoster, 2000; Williams & Arnold, 2002). The causal link between past and future offending is emphasised and it is argued that the commission of criminal acts increases the probability of future offending (Paternoster et al., 1997). Other theories emphasise difference in antisocial propensities and the cumulative effects of past experiences on present and future behaviour (Sampson & Laub, 1993, 2005).

A further contentious theoretical issue within the criminal career perspective is theoretical generality, where there is a division between those explanations of criminality that argue that variation in criminal behaviour can be accounted for by a single theory, and those that argue different theories are needed to explain different offending patterns (Paternoster et al., 1997). Single theory explanation assume that all offenders proceed along a single general pathway to crime, while multiple theory explanations recognise that there may be multiple pathways to crime where different offending patterns are the result of unique causal processes (Paternoster et al., 1997). In developmental psychopathology, the principles of equifinality and multifinality are evoked to explain the etiology of disorders, and are analogous to the multiple theory position for the explanation of offending patterns. In psychopathology, it is recognised that there exists significant diversity in the processes leading to and outcomes of disorders (Cicchetti & Rogosch, 1996). Equifinality refers to a situation where the same outcome (for example, criminal behaviour) may be reached through a diverse range of pathways, or initial conditions and processes (Cicchetti & Rogosch, 1996). Multifinality refers to the situation where a single pathway, or initial condition and process, may lead to a diverse range of different outcomes (Cicchetti & Rogosch, 1996). The concepts of equifinality and multifinality may help to explain the heterogeneity in patterns of offending across the life course. The DLC perspective adopts the assumption of multiple pathways to crime, where it is believed that offenders vary in kind as well as degree (Paternoster et al., 1997). Both Gottfredson and Hirschi's (1990) and Sampson and Laub's (2004, 2005) theories may be described as adopting the notion of general causality, since they believe all variation in offending patterns in a population may be explained by a single theory.

Continuity and change in criminal behaviour may be best explained by an integration of both population heterogeneity and state dependence perspectives, where differences in continuity and

change of antisocial behaviour may be explained by both differences in antisocial propensities and the cumulative effects of past experiences on present and future behaviour (Nagin & Paternoster, 2000). Empirical research on the continuity of offending at present has not advanced to a point where questions concerning the operation of causal factors across the life-course can be definitively resolved. There exists evidence to support both positions of population heterogeneity and state dependence, as well as single and multiple pathway explanations. Paternoster et al, (1997) conducted a series of analyses to explore the hypotheses proposed by different theoretical perspectives using a longitudinal data set derived from 848 correctional training school releasees in the United States. Evidence was found to support the important roles that both continuity and stability perform in the processes driving offending trajectories (Paternoster et al., 1997). It was argued that a mixed model that integrated aspects of population heterogeneity and state dependence was consistent with the data examined, suggesting that it is important to study both continuity and change in criminal careers (Paternoster et al., 1997). While the results of the analysis provided strong support for the dynamic process of stability and change in criminal careers, support for the complex hypotheses of developmental theories were equivocal (Paternoster et al., 1997). For example, the effects of prior behaviour on the continuity of criminal behaviour were not found to differ between high and low criminal propensity groups (as hypothesised by Moffitt, 1993, 1997).

Differences in the continuity and change of antisocial behaviour may be explained by both static (e.g., antisocial propensities) and dynamic (e.g., the cumulative effects of past experiences on present and future behaviour) factors that may exert differing influences on different groups of offenders across different points in time (Nagin & Paternoster, 2000; Paternoster et al., 1997). The growing body of empirical evidence examining the continuity and change in criminal behaviour over the life-course indicates that the effects of both individual differences in criminal propensity and individual life events and experiences after controlling for criminal propensity are vital in understanding criminal behaviour and desistance from offending (Nagin & Paternoster, 2000). Thus, the available evidence supports a mixed model of the development of offending over the life-course. This suggests that interventions aimed at reducing or preventing the occurrence of criminal behaviour must address both time-stable individual factors and time-varying factors, where consideration of the timing of interventions is paramount in order to intervene at developmentally salient points. Developmental crime prevention interventions are based on the premise that the probability of future offending can be reduced by altering life conditions at points (transitions) where individuals are most susceptible to risks.

## **1.4. Outline of the Report**

This report is organised based on the robustness of the available evidence and based on the DoC's mandate, with those strategies that have the strongest scientific basis presented first and situational crime prevention presented last because it is not currently within the DoC's mandate. Presented in Chapter Two is an overview of the developmental crime prevention approach and a discussion of the challenges faced when implementing interventions based on this approach. The findings of meta-analyses conducted by the Washington State Institute for Public Policy (2001, 2004, 2006) and Farrington and Welsh (2003) that explored the efficacy of such interventions will be presented and the key features and efficacy of eight interventions based on this approach that have had long-term follow-up impact evaluations will be examined.

Law enforcement and criminal justice strategies for preventing offending are described in Chapter Three. After providing a discussion about the juvenile justice system, the findings from recent meta-analyses conducted by the Washington State Institute for Public Policy (2001, 2004, 2006) will be presented highlighting ten interventions that resulted in reductions in offending and were viewed as resulting in cost savings for taxpayers. Additional evidence will then be reviewed concerning the efficacy of diversionary and rehabilitative interventions along with incapacitation.

An examination of the community crime prevention approach, highlighting the theoretical underpinnings and challenges that must be faced when implementing and evaluating such interventions is provided in Chapter Four. The efficacy of nine community interventions will be explored, including: (i) community policing, (ii) community mobilisation, (iii) community economic development, (iv) mentoring, (v) school after-hours programs, (vi) job/vocational training, (vii) weed and seed, (viii) recreation interventions, and (ix) removing criminogenic commodities.

The focus of Chapter Five is on Situational Crime Prevention (SCP). An overview of the theoretical basis of this approach is provided and a discussion of the four criticisms that have been directed at such interventions. The importance of place and blocking criminal opportunities will be emphasised and the efficacy of a range of strategies that have been implemented in apartments and residential places, money spending places, transportation places, and other public places will be explored.



Chapter Six will provide an overview of the aims of this report and main findings. The efficacy of the four main approaches to reduce juvenile offending/recidivism will be discussed and the lack of research exploring the impact of programs on Indigenous offending/recidivism and reporting cost-benefits will be highlighted. The report will conclude by examining the need for more scientifically robust research in the area, commenting on the feasibility of conducting meta-analyses of the various program options.

## **Chapter 2. The Efficacy of Developmental/Early Intervention Strategies**

In this chapter, a brief overview of developmental crime prevention will be provided. The findings of recent meta-analyses that examined how effective early intervention and family-based prevention programs have been at reducing offending will be presented. Following this, the key features of programs that have had long-term impact evaluations and explored the effect of the program on delinquency or offending will be reported. Where available, information relating to the cost-benefits of these programs will be provided.

### **2.1. Developmental Crime Prevention**

Developmental interventions aim to promote positive youth development and prevent antisocial behaviour before it emerges (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004; Farrington, 2002; Howell, 2003). This approach is based on the substantial body of research indicating that antisocial behaviour has its roots in early development, where early experiences shape later behaviour (Bor, Najman, O'Callaghan, Williams, & Anstey, 2001; Brame, Mulvey, & Piquero, 2001; Brennan, Hall, Bor, Najman, & Williams, 2003; Catalano et al., 2004; Compas, Hinden, & Gerhardt, 1995; NPC, 1999; Farrington, 2002; Farrington, Coid, Harnett, Jolliffe, Soteriou, Turner, & Speed, 2006; Ge, Donnellan, & Wenk, 2001; Jessor, Donovan, & Costa, 1991; Loeber & Farrington, 2000; Maughan, Pickles, Rowe, Costello, & Angold, 2000; Moffitt, 1997; Patterson, DeBaryshe, & Ramsey, 1989; Tremblay & Craig, 1995).

Developmental prevention involves intervening with individuals who are at-risk of developing criminal dispositions due to their current or earlier environment. Many of the factors that have been related to the development of antisocial behaviour are well established and highly replicable across studies, although these factors tend to be similar for most forms of anti-social behaviour (Catalano et al., 2004; Catalano, Hawkins, Berglund, Pollard, & Arthur, 2002; Farrington, 2002). That is, no one form of antisocial behaviour has been identified that is caused by unique risk factors or a unique combination of risk factors.

The effects of risk factors on development appear to be cumulative, interactive, and sequential (Farrington, 2002; Granic & Patterson, 2006). However, the accumulation of multiple risk factors appears to be more important than the acquisition of specific risk factors for the development of anti-social behaviour (Farrington, 2002; Howell, 2003; Stouthamer-Loeber, Loeber, Wei, Farrington, & Wikstrom, 2002; Tremblay & LeMarquand, 2001; Wasserman & Miller, 1998; Wasserman & Seracini, 2001). Empirical evidence indicates that antisocial behaviour is much more likely among those who are exposed to or experience greater levels of risk (Ge et al., 2001; Loeber & Farrington, 2000; Mason & Windle, 2001; Tremblay & LeMarquand, 2001; Wasserman & Seracini, 2001).

Developmental prevention strategies draw on empirical evidence about factors that are known to impact on human development in an effort to reduce the criminal potential of individuals (Farrington, 2002; Tremblay & Craig, 1995). As such, the approach has been described as risk-focused prevention where identified risk and protective factors within various contexts (Table 2.1) are targeted by prevention strategies (Farrington, 2002). Programs aim to prevent crime by reducing the number of risk factors which decreases a person's susceptibility to criminal behaviour and through increasing protective factors which enables individuals to resist criminal behaviour in difficult situations (Farrington, 2002).

### ***2.1.1. Challenges to Implementing Developmental Interventions***

One major issue in constructing and implementing developmental interventions is the timing of interventions (Homel, 2005). The general aim of developmental programs is to intervene early in a transition stage or developmental pathway leading to antisocial behaviour, where the demands on an individual significantly change (Freiberg, Homel, Batchelor, Carr, Hay, Elias, Teague, & Lamb, 2005). However, due to our rudimentary understanding of the developmental origins of antisocial behaviour, identifying an optimum point at which to intervene is difficult. Individuals may not successfully progress through transition points where earlier transitions produced distrust, alienation, or ineffective skills and coping strategies. In such a case, there are cumulative risk factors that make successful progress through a transition difficult.

**Table 2.1: Risk and Protective Factors**

<b>Risk Factors</b>				
<b>Child Factors</b>	<b>Family Factors</b>	<b>School Context</b>	<b>Life Events</b>	<b>Community and Cultural Factors</b>
Prematurity	<i>Parental characteristics</i>	School failure	Divorce and family break-up	Socio-economic disadvantage
Low birth weight	Teenage mothers	Normative beliefs about aggression	War or natural disasters	Population density and housing conditions
Disability	Single parents	Deviant peer group	Death of a family member	Urban area
Prenatal brain damage	Psychiatric disorder, especially depression	Bullying		Neighbourhood violence and crime
Birth injury	Substance abuse	Peer rejection		Cultural norms concerning violence as acceptable response to frustration
Low intelligence	Criminality	Poor attachment to school		Media portrayal of violence
Difficult temperament	Antisocial models	Inadequate behaviour management		Lack of support services
Chronic illness				Social or cultural discrimination
Insecure attachment	<i>Family Environment</i>			
Poor problem solving	Family violence and disharmony			
Beliefs about aggression	Marital discord			
Attributions	Disorganised			
Poor social skills	Negative interaction / social isolation			
Low self-esteem	Large family size			
Lack of empathy	Father absence			
Alienation	Long term parental unemployment			
Hyperactivity/disruptive behaviour	<i>Parenting Style</i>			
impulsivity	Poor supervision and monitoring of child			
	Discipline style (harsh or inconsistent)			
	Rejection of child			
	Abuse			
	Lack of warmth and affection			
	Low involvement in child's activities			
	Neglect			
<b>Protective Factors</b>				
<b>Child Factors</b>	<b>Family Factors</b>	<b>School Context</b>	<b>Life Events</b>	<b>Community and Cultural Factors</b>
Social competence	Supportive caring parents	Positive school climate	Meeting significant person	Access to support services
Social skills	Family harmony	Pro-social peer group	Moving to new area	Community networking
Above average intelligence	More than two years between siblings	Responsibility and required helpfulness	Opportunities at critical turning points or major life transitions	Attachment to the community
Attachment to family	Responsibility for chores or required helpfulness	Sense of belonging / bonding		Participation in church or other community group
Empathy	Secure and stable family	Opportunities for some success at school and recognition of achievement		Community / cultural norms against violence
Problem solving	Supportive relationship with other adult	School norms about violence		A strong cultural identity and ethnic pride
Optimism	Small family size			
School attachment	Strong family norms and morality			
Easy temperament				
Internal locus of control				
Moral beliefs				
Values				
Self-related cognitions				
Good coping style				

Source: Homel et al., 1999

Because of the cumulative nature of risk factors and the stability of offending behaviour from childhood to adulthood, intervening early in an 'at-risk' child's life rather than at a particular

transition point is an effective preventative strategy. This is because the period from infancy through to adolescence can be viewed as the formative period in human development, where development proceeds at a pace unmatched in other periods of the life-course and may occur in several domains simultaneously (McLeod & Almazan, 2003). However, the targeting of ‘at-risk’ children rather than particular pathways has a downside in that a substantial proportion of young people will be misidentified as potential delinquents (Farrington, 1994; Lab, 1992; Loeber & Dishion, 1983; Polk, 1997).

### ***2.1.2. Meta-Analyses of Developmental Crime Prevention Programs***

Meta-analyses of developmental or early interventions have been conducted by the Washington State Institute for Public Policy (2001, 2004, 2006) and Farrington and Welsh (2003). The Washington State Institute conducted meta-analyses of early childhood programs and middle childhood and adolescent programs. Evaluations were weighted to take into account the methodological quality of research and the long-term effects of interventions on offending were estimated. The anticipated cost-savings resulting from reduced crime were estimated for tax-payers using estimates about downstream criminal justice system cost savings. Importantly, marginal tax-payer savings were estimated, which are costs that should change as a result of reduced offending. These cost estimates were produced based on how offenders were processed in Washington and the transferability of estimates will depend on many factors such as different justice processes and costs. Victim costs were also estimated which included monetary costs incurred as a result of injury and property damage or loss as well as quality of life costs which were estimated based on jury awards.

Table 2.2 presents the results of the meta-analysis with all monetary values in 2007 dollars (adjusted for inflation) and converted into Australian dollars (1 \$US = 1.15 \$AUS). It is evident that early intervention programs typically result in reductions in offending by young people by about 15%. Furthermore, these programs were assessed as being cost-effective in the Washington State context, with the benefits for crime victims and tax payers totalling more than the cost of the interventions.

**Table 2.2: Washington State Institute for Public Policy Meta-analyses of Developmental Intervention Programs**

	Intervention Program and reference/s	Effect on Crime Outcomes (a)	Cost of Crime Reduction Per Participant (b)	Benefits and Costs (Per Participant, 2007 Dollars)			
				Benefits to Crime Victims	Benefits to Tax Payers	Costs (c)	Benefits - costs per participant
Early Intervention	<i>Nurse Family Partnership-Mothers</i> Olds, Eckenrode, et al. (1997)	-56.2% (1)	\$6,534	\$13,591	\$9,619	\$6,375	\$16,834
	<i>Nurse Family Partnership-Children</i> Olds, Henderson, Cole, et al. (1998)	-16.4% (1)	\$885 (\$9,328)	\$10,174	\$5,801	\$864	\$15,112
	<i>Pre K education for low income 3 and 4 year olds</i> Campbell, Ramey, Pungello, Sparling & Miller-Johnson (2002) Garces, Thomas & Currie (2002) Lally, Mangione & Honig (1987) Oden, Schweinhart, Weikart, Marcus & Xie (2000) Pagani, Tremblay, Vitaro & Parent (1998) Reynolds, Temple, Robertson & Mann (2002) Schweinhart, Barnes & Weikart (1993)	-14.2% (8)	\$717 (\$10,779)	\$9,600	\$5,474	\$699	\$14,374
	<i>Seattle Social Development Project</i> Hawkins, Kosterman, Catalano, Hill & Abbott (2004)	-18.6% (1)	(\$5,253)	\$1,892	\$5,116		
Middle Childhood and Adolescent (non-juvenile offender) programs	<i>High School Graduation</i> Lochner & Moretti (2004)	-10.4% (1)		\$2,049	\$3,361		
	<i>Guiding Good Choices</i> Mason, Kosterman, Hawkins, Haggerty & Spoth (2003)	-9.1% (1)		\$672	\$2,466		
	<i>Parent-Child Interaction Therapy</i> Chaffin, Silovsky, Funderburk, Valle, Brestan, Balachova, Jackson, Lensgraf & Bonner (2004)	-3.7% (1)		\$316	\$924		

Notes: (a) Number of studies % change is based on in parentheses; (b) Cost that was attributed to crime reduction effect. Net direct cost of program in parentheses; (c) Marginal cost compared to cost of alternatives; Adapted from Washington State Institute for Public Policy, 2006

Farrington and Welsh's (2003) meta-analysis included 40 family-based programs that aimed to reduce offending and anti-social behaviour. Four criteria were used to determine which studies would be included: (i) the family was the focus of the intervention, (ii) there was an outcome measure of delinquency or anti-social child behaviour, (iii) the evaluation used a randomised or well controlled experiment, and (iv) the original sample size was at least 50 (p. 127). The analysis included six types of programs, of which five were found to be effective:

- (i) Multi-Systemic Therapy (MST),
- (ii) parental training,
- (iii) home visiting,
- (iv) day-care/pre-school, and
- (v) home/community programs.

The MST programs included in the review where implemented after offending had commenced and focused on preventing recidivism and will therefore be examined in Chapter Five (Law Enforcement and Criminal Justice Strategies). School-based programs were found to be the least effective (non-significant).

Overall, an effect size of .223 was reported which corresponds to a significant 11% reduction in recidivism. Of the 19 studies that reported delinquency outcomes (rather than anti-social behaviour outcomes), ten had significant effect sizes (mean = .321). This corresponds to a significant 16% reduction in recidivism. The effects on long-term delinquency were found to be greater than for short-term delinquency outcomes (.372 versus .224). The specific details of eight of the programs that had long-term follow-up evaluation are outlined in Table 2.3 and examined in more detail below.

**Table 2.3: Studies Examining Long-term Delinquency and Offending**

Publication, Location	Initial Sample	Conditions	Results (N)	% difference
Olds et al. (1998), Elmira, N.Y.	400 Pregnant women	E = home visits C = no home visits	15 years arrest rate EM 0.166 (176) CM 0.360 (148)	-54%**
Lally et al. (1988), Syracuse, N.Y.	182 children at birth	E = parent education C = regular child care	Delinquency court referrals up to age 15 E 1.5% (65) C 16.7% (54)	-91%*
Campbell et al. (2002), South Carolina	111 children at birth	E = intensive preschool plus family support C = usual preschool	Felony convictions up to age 21 E 7.5% (53) C 11.8% (51)	-36%
Reynolds et al. (2001), Chicago, Illinois	1,539 children age 3	E = enriched preschool and family support C = regular preschool	Arrests up to age 18 E 16.9% (911) C 25.1% (493)	-33%*
Schweinhart et al. (2005), Ypsilanti, Michigan	123 children aged 3-4	E = enriched preschool plus home visits C = no preschool	Felony arrests up to age 40 E 31.0% (58) C 47.7% (65)	-35%**
Tremblay et al. (1996), Montreal, Canada	319 boys age 7	E = child skills training plus parent training C = no treatment or just attention	SR arrest up to age 15 E 14.0% (43) C 30.1% (123)	-53%*
Hawkins et al. (1999), Seattle, Washington	375 children age 6	E = parent/teacher training C = no treatment	SR arrests up to age 18 E 18.8% (149) C 24.8% (206)	-24%
Harrell et al. (1999), 5 U.S. sites	671 adolescents age 11-13	E = risk focused prevention C = no treatment	12 months recorded crime E 28.0% (264) C 34.3% (236)	-18%

Notes: \* p<.05, \*\* p<.01; E = experimental; C = control; SR = self reported; EM = experimental mean; CM = control mean. Adapted from Welsh and Farrington, 2006

## 2.2. Developmental Programs

The programs discussed below are organised based on when the child participated in the program: *infancy and early childhood, pre-school aged, or during adolescence*. While some of these programs were not specifically targeted at reducing offending or had other important outcomes, this review focused on the impact that interventions had on offending. As such, the impact that programs had on outcomes such as anti-social or aggressive behaviour, child abuse and neglect, school failure, income, or other outcomes are not examined. Of the eight programs reviewed below, seven were found to result in reductions in offending (between 18% and 91%). Cost-benefit analyses conducted on four programs demonstrated that three resulted in long-term savings.

### 2.2.1. *Infancy and Early Childhood Programs*

Several programs have been developed and implemented that address risk-factors identified early in the life-course including home visitation programs for mothers with infants and programs involving parental training and day-care. The most well-known home visitation program is the Elmira Prenatal/Early Infancy Project (Olds et al., 1998). A total of 400 women who had not previously given birth participated in the program, with 85% either low income, unmarried, or younger than 19 years at entry. This program involved nurse visits to mothers during pregnancy ( $M=9$ , range 0-16) and during the first two years of the child's life ( $M=23$ , range = 1-16). During the visits, nurses gave advice about child rearing, infant development, nutrition, and drugs and alcohol.

The children were followed until age 15 ( $n=324$ ) and it was found that the children of those that received the nurse visits were arrested at a significantly lower rate (54%) than the children on mothers who did not receive visitation (Welsh & Farrington, 2006). The overall effects of the program were found to be greatest among those that were most at-risk (low income and unmarried). A cost-benefit analysis of the project indicated that for every dollar invested in the program, there was a \$4 saving in future government expenses when applied to high-risk families (Karoly et al., 1998). That is, the cost of the program for each high-risk participant was US\$6,083 (1996 dollars) and the estimated savings was US\$24,694. However, the cost-benefit analysis indicated that the program did not cover program costs when applied to all families.



Another program using prenatal/postnatal intervention was the Syracuse (New York State) Family Development Research Program that was targeted towards poor African American pregnant women (Lally, Mangione, & Honig, 1998). This program provided weekly assistance in child-rearing, health, and nutrition. Additionally, the program provided child training on social and cognitive skills and child behaviour management through the provision of day-care until children were aged five. A matched control group was chosen when the children were three years old and 119 control and intervention children were followed up between the ages of 10 and 15. It was found that intervention children had 91% fewer juvenile court referrals than the control group. A cost-benefit analysis done on the Syracuse program by Aos, Phipps, Barnoski, and Lieb (2001) found that the tangible savings to the justice system and crime victims (US\$15,487 per participant) failed to cover how much the program cost for each participant (US\$45,092).

### ***2.2.2. Programs for Pre-School Aged Children***

The next developmental opportunity for intervention occurs when children enter pre-school. The Abercedarian Project commenced in South Carolina (United States) in 1972 and involved the provision of an intensive cognitive pre-school curriculum with family support that targeted poor children (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002). Four cohorts of individuals born between 1972 and 1977 were randomly assigned to the intervention or control group. The program was found to result in a non-significant 36% reduction in convictions up to age 21 when the treatment group were compared with the control group.

Similarly, the Child-Parent Center program commenced in 1967 in 11 Chicago public schools and targeted economically disadvantaged children aged three to five years (Reynolds, Temple, Robertson, & Mann, 2001). The program provided high-quality pre-school and family support and provided the educational component into elementary school until they reached nine years of age. Findings indicated that those that received the intervention were less likely to be arrested for any crime before they were aged 18 (17% versus 25%), as well as for violent offences (9% versus 15%) and non-violent offences (14% versus 19%) than the matched control group (Welsh & Farrington, 2006).

The High/Scope Perry Preschool Study in Michigan (United States) between 1962 and 1967 aimed to improve cognitive functioning and reduce school failure. The program involved the random

allocation of 123 disadvantaged African-American children to either an enriched preschool experience with home visits once a week for two years (covering ages 3-4, n=58) or to a control group (n=65). The intervention curriculum was tailored to be developmentally appropriate and sought to promote intellectual, social, and physical development through the provision of an open framework where learning activities could be self-initiated by children with teacher support (Weikart & Schweinhart, 1992). Teachers formed working partnerships with the children's parents, where the teacher visited children and their mothers at home to discuss the child's developmental progress and model adult-child activities. Each class session was 2.5 hours duration and conducted on weekday mornings for 30 weeks.

The High/Scope Perry Preschool Study was found to be particularly effective in reducing overall arrests and arrests for violence and property crimes. Of the 123 participants, 112 (91%) were followed up until aged 40 and it was found that those receiving the intervention had 35% fewer arrests than the control group (Welsh & Farrington, 2006). Specifically, the preschool group had significantly fewer lifetime arrests (36% versus 55% arrested 5 or more times), arrests for violent crimes (32% versus 48% ever arrested), property crimes (36% versus 58% ever arrested), and drug crimes (14% versus 34% ever arrested) (Schweinhart, 2004). A cost-benefit analysis of the program indicated that in the year 2000, the economic return to society was US\$258,888 per participant on an investment of US\$15,166 for each participant, resulting in a saving of US\$17.07 per participant for each dollar invested in the program (Schweinhart, 2004). These cost savings were based on crime costs, education savings, and increased taxes due to higher earnings.

### ***2.2.3. Programs for Adolescents***

The Seattle Social Development Project was constructed as a longitudinal study of 808 multi-ethnic urban children which began in 1985 when the children were aged 10 (Hawkins et al., 1992; Hawkins et al., 2003). The sample was selected from 18 Seattle (Washington, United States) public elementary schools in high crime neighbourhoods. The intervention was based on the Social Development Model, which is an integrated developmental theory of behaviour. Students in the schools were non-randomly assigned to either: (i) full intervention receiving the social development program from grades one to six, (ii) late intervention receiving the program during grades five and six, (iii) parent training only intervention during grades five and six, or (iv) control conditions who received no intervention. The social development intervention packages included proactive teacher

management, interactive teaching, and cooperative learning techniques in classrooms and aimed to reduce the harms associated with risk factors and promote the development of protective factors for adolescent health and behaviour problems. The three treatment groups received parent training that provided parents with developmentally appropriate parenting skills that addressed problematic family management practices, parental attitudes towards problem behaviours, family conflict, and strengthening family bonds.

Six years after the intervention ended (when aged 18), those that received the intervention reported 24% fewer arrests than the control group (Hawkins et al., 2003; Welsh & Farrington, 2006). A cost analysis of the Seattle program by Aos et al., (2001) indicated that the program had a desirable benefit-cost ratio of 1.79 and was therefore cost-effective. However, this cost analysis only included tangible criminal justice and victim savings. In the analysis, criminal justice and victim savings were found to be equally important.

The Montreal Longitudinal Experiment Study began in 1984 with the original aim of examining the development of antisocial behaviour among disadvantaged male children, focusing on the role of parent-child relationships from kindergarten to high school (Tremblay et al., 2003). A total of 53 schools in low socio-economic areas in Montreal (Canada) were studied. A sub-sample of the most disruptive boys was identified and randomly assigned to three groups: (i) an intensive longitudinal observation group (n=82), an experimental intervention group (n=43), and a control group (n=41) so that the possible effects of intensive longitudinal observation could be considered. The intervention was an intensive multi-modal program aimed at disruptive kindergarten boys to prevent the development of anti-social behaviour which lasted two years. The intervention targeted both children and parents and provided programs that aimed to improve children's social-cognitive skills and improve parenting skills. The treatment group had fewer self-reported arrests up to age 15 (by 53%) than the control group. However, at long-term follow-up (up to 17 years), there were no significant differences between the treatment and control groups on court measures of delinquency. While it was hypothesised that the program had an indirect effect on offending, the intervention did not achieve its aim of reducing the official delinquency of the intervention group.

Another multi-modal program Children at Risk was carried out in five sites across the United States (Harrell et al., 1999). This program targeted high-risk 11 to 13 year old adolescents living in severely distressed neighbourhoods and sought to provide integrated services to both youth and

members of their households. Children were randomly assigned to the treatment (n=338) and control (n=333) groups. Case workers collaborated with staff from criminal justice agencies, schools and other community organisations and provided the treatment group with family services, skills training, mentoring, education, and after school activities. The program was found to reduce offending by a non-significant 18% and the researchers concluded that this was largely due to the program's ability to reduce the negative influence of delinquent peer associations.

## **2.3. Conclusion**

This chapter provided an outline of developmental crime prevention which aims to reduce the likelihood of an individual committing crime by focusing on developmental risk and protective factors. An examination of the meta-analyses conducted by the Washington State Institute for Public Policy (2001, 2004, 2006) and Farrington and Welsh (2003) indicated that such programs reduced offending by about 15%, although programs that had longer follow-up periods were more effective. Eight programs that examined the long-term effects of interventions on offending were examined which were found to result in reduction in offending by between 18% and 91%. The interventions that had been subjected to economic analysis indicated that the cost of developmental interventions were generally off-set by the future economic benefits produced by such programs.

## **Chapter 3. The Efficacy of Law Enforcement and Criminal Justice Strategies**

Provided in this chapter is an overview of the various law enforcement and criminal justice strategies that may be used to prevent juvenile recidivism. After a brief overview of the juvenile justice system, the findings of meta-analyses that were conducted by the Washington State Institute for Public Policy (2001, 2004, 2006) will be presented. Additional evidence concerning the efficacy of a range of diversionary and rehabilitative interventions will be examined along with evidence concerning the efficacy of incapacitation.

### **3.1. The Juvenile Justice System**

Managing juvenile criminal behaviour has become a significant concern for modern justice systems throughout the western world (Hoge, 2001; Howell, 2003; MacKenzie, 2006). Juvenile criminal justice systems hold significant responsibility for preventing future criminal behaviour of known juvenile offenders. That is, juvenile justice systems must manage and attempt to prevent criminal behaviour of those already identified as juvenile perpetrators. There are many interventions used by criminal courts and corrections that attempt to manage and prevent future criminal behaviour committed by juveniles (MacKenzie, 2006; McDougall, Perry, & Farrington, 2006). Furthermore, there is an extensive body of literature that focuses on criminal justice efforts aimed at crime prevention, although the majority of the literature is not empirical research that evaluates the effectiveness of crime prevention interventions (Sherman et al., 1997).

The juvenile justice system operates on conflicting principles with considerable ambiguity (Smith, 2005). As a system that deals with adolescent individuals, the system is often in conflict in terms of how it views individuals, where it lies between a view of adults as moral rational beings able to make choices and a view of children as a force of nature who do not have the capacities to act as independent moral agents (Hoge, 2001; Smith, 2005). There is no clearly defined passage from the status of a child with limited responsibility to an adult as a free agent, resulting in a situation where there is considerable ambiguity in how adolescent offenders should be dealt with by the juvenile justice system, which is heightened by the fact that criminal behaviour peaks in mid to late

adolescence (Smith, 2005). Hence, there is considerable tension regarding how the juvenile justice system should respond to the offending of young individuals, with responses falling between a welfare function where the system operates to help and protect children to the more traditional function of criminal justice systems where the purpose is to punish criminal behaviour.

The conflict inherent in the juvenile justice system is partly the result of attempts to achieve numerous goals that may not necessarily be compatible. Many responses by the juvenile justice systems to deal with the offending behaviour of juveniles appear to take a stance that accommodates both functions of the juvenile and adult criminal justice systems, where such interventions as diversionary practices, mediation, restorative practices, specialised courts, supervision and rehabilitative programs may occur instead of or supplement traditional punitive responses (Smith, 2005). Juvenile offenders are likely to have multiple needs that would not be addressed by traditional justice responses.

The effectiveness of juvenile justice systems can be evaluated against a number of different criteria, not solely in terms of recidivism rates or other outcome measures. Effective juvenile justice systems could be determined through the provision of morally and legally appropriate responses to criminal behaviour, through the involvement of relevant parties in the justice process (victims, offender's supporters etc.), fostering the rehabilitation of young offenders as the primary response to criminal behaviour, the deterrence of potential offenders through the symbolic communication of punishment to the general public, improving the social control of those likely to become involved in criminal behaviour, and changing the behaviour of offenders so they will not offend when not under the control of the justice system (Smith, 2005).

Juvenile justice systems in most modern western countries are structured as a graduated system of sanctions to cover a wide range of offences and cater to the diverse needs of juvenile offenders (Hoge, 2001; Smith, 2005). The juvenile justice system has many sanctions that may be used to respond to the criminal behaviour of young people. As outlined in Table 3.1, nominal sanctions are the least severe options available to juvenile courts and are usually used for those convicted of minor crimes, for a first offence, or for those who are viewed as having a low risk of recidivism (Hoge, 2001). These sanctions generally aim to divert youth from formal justice processing. Intermediate sanctions refer to a range of options that also aim to divert youth from formal processing and usually involve participation in community based programs, supervision by criminal

justice authorities, payment of fines or restitution, or participation in mandatory treatment programs. Institution-based sanctions are generally the most severe sanctions juvenile justice systems can impose and generally involve removing young offenders from the community because of the serious/repeat nature of their offending. Treatment services may also operate within institutions aimed at catering to the needs to juvenile offenders. After-care programs are those interventions that offenders are required to participate in following release from custody.

**Table 3.1: Outline of the Major Forms of Sanctions Available at the Dispositional Phase to Juvenile Justice Systems**

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Nominal Sanctions
Dismissal
Warning
Warning with counselling
Diversion to conferencing
Intermediate Sanctions
Probation
Standard probation
Intensive supervised probation
Electronic monitoring
House arrest
Shock incarceration
Fines/Restitution
Community service orders
Treatment orders
Institution-Based Sanctions
Secure custody
Community-based residential (open custody)
Foster homes
Boot camps
After-Care Programs

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Adapted from (Hoge, 2001, p. 200).

### ***3.1.1. Punitive Versus Lenient Systems***

Huizinga, Schumann, Ehret and Elliott (2004) conducted a comparative longitudinal study of the similarities and differences between two juvenile justice systems in different countries (Denver, Colorado and Bremen, Germany) in an effort to examine the effects of different characteristics of the systems on subsequent delinquency. The system in Denver could be described as a more severe and punishment oriented system while the system in Bremen could be described as a more lenient and diversion oriented system (Huizinga, Schumann, Ehret, & Elliott, 2004). Evidence indicated that the differences between the systems had little impact on the general offending rates of juvenile offenders. The prevalence rate of total delinquency was in the 62-69 per cent range for individuals in both systems within the 14 to 17 year old age period, although young people processed through

the punitive-orientated Denver system consistently committed a greater number of offences per year (Huizinga et al., 2004). It was found that police contacts and arrests for delinquent offences occurred at an earlier age in Denver, where the police were found to arrest individuals at higher rates across all age groups which was most often two times or more than in Bremen.

Across both systems, evidence indicated that there was very little effect of arrest on subsequent delinquent behaviour, although if there was an effect, arrest led to either maintenance of previous levels of criminal behaviour or increasing the rate of subsequent delinquent behaviour. Furthermore, the level of sanction applied to juvenile offenders following arrest had minimal influence on subsequent delinquent behaviour. When an effect of sanctioning was observed, results indicated that more severe sanctions were more likely to lead to higher levels of future delinquent or criminal involvement. It appeared that sanctions were likely to limit social opportunities, such as employment, which in turn influenced delinquent behaviour. The results of the study suggested that arrest and sanctioning may not be particularly effective forms of responding to delinquent behaviour among juveniles, where such responses are more likely to sustain or increase previous levels of delinquent or criminal behaviour. However, the results also indicated that more lenient justice systems were not more or less likely to lead to higher levels of antisocial behaviour subsequent to intervention, calling into question the legitimacy of punitive responses (Huizinga et al., 2004).

### ***3.1.2. Effect of Involvement in the Juvenile Justice System on Recidivism***

The effect of justice system involvement on subsequent antisocial behaviour is one of the most significant issues the juvenile justice system must confront. One of the most consistent findings concerning the life-course of criminal behaviour is that the most persistent and serious offenders generally come into contact with the justice system at early ages (Bernberg & Krohn, 2003; DeLisi, 2006; Fergusson & Horwood, 2002; Ge et al., 2001; Mazerolle, Brame, Paternoster, Piquero, & Dean, 2000; Smart, Vassallo, Sanson, & Dussuyer, 2004; Wiesner & Capaldi, 2003). One of the major concerns is whether criminal justice system involvement itself functions to increase the probability of future offending (Bernburg & Krohn, 2003; Johnson, Simons, & Conger, 2004).

Johnson et al, (2004) obtained evidence indicating that criminal justice system involvement predicted later delinquent behaviour and criminal justice system involvement, and also operated to



strengthen or solidify deviant peer associations. Evidence further indicates that involvement in criminal justice interventions acts to increase the probability of subsequent involvement in deviant networks and also participation in subsequent delinquent behaviour, even when controlling for initial levels of delinquency (Bernburg & Krohn, 2003; Bernburg, Krohn, & Rivera, 2006; Leve & Chamberlain, 2005). A process argued to account for these findings is that involvement in criminal justice interventions operates to officially label juvenile offenders as deviant, thereby increasing the probability they will associate in deviant groups comprised of similarly labelled individuals and participate in subsequent criminal behaviour due to that association and the restriction of social opportunities to engage in pro-social activities (Bernburg et al., 2006). Concerns surrounding the labelling effects of criminal justice system involvement have perhaps led in part to the focus of juvenile justice on diverting young offenders from formal avenues of prosecution.

### **3.2. Washington State Meta-Analyses of Criminal Justice Interventions**

The Washington State Institute for Public Policy (2001, 2004, 2006) conducted meta-analyses of a range of criminal justice interventions, many of which were defined by the Institute (Table 3.2). The meta-analyses applied weights to past evaluations based on the methodological quality of research and modelled the long-term impact of interventions on offending. The model was based on information derived from Washington's justice system that assessed the probability of arrest, conviction, and type of sentence and the impact of interventions on the average daily prison population, interaction people have with the justice system, and the number of offences that individuals were likely to commit. The cost of interventions were assessed from a range of sources, as well as the direct net cost taking into account the cost of alternative sentencing options and how the justice system operates in Washington. The estimated costs of various justice processes in Washington were used to assess the economic benefits of reduced offending for tax-payers, which were assessed at a marginal rate (the amount that should change because of a change in the rate of offending). Victim costs were estimated based on the monetary costs resulting from injury and property damage or loss as well as quality of life costs which were estimated based on jury awards.

**Table 3.2: Definitions of Criminal Justice Interventions**

**Multidimensional Treatment Foster Care (v. regular group care)**

MTFC is an alternative to group residential placement for high-risk and chronic juvenile offenders. Youth are placed with two trained and supervised foster parents for six to 12 months, and the youth's parents participate in family therapy. Near the end of the child's stay, the youth and his or her parents participate together in family therapy. The intervention is intensive, with at most two, and usually one, youth placed in the foster family. Families are recruited, trained, and closely supervised. MTFC-placed adolescents are given treatment and intensive supervision at home, in school, and in the community; clear and consistent limits with follow-through on consequences; positive reinforcement for appropriate behaviour; a relationship with a mentoring adult; and separation from delinquent peers. MTFC training for community families emphasises behaviour management methods to provide the youth with a structured and therapeutic living environment.

**Adolescent Diversion Project (for low risk offenders)**

This program stems from research experiments conducted in the 1970s and 1980s where youth were diverted from the juvenile court to prevent labelling as "delinquent". ADP "change agents" (usually college students) work with youth in their environment to provide community resources and initiate behavioural change. Change agents are trained in a behavioural model (contracting, with rewards written into actual contracts between youth and other significant persons in the youth's environment) and to become advocates for community resources. Youth and change agents are matched, whenever possible, on race and gender.

**Functional Family Therapy on Probation**

This program targets youth, aged 11 to 18, with problems of delinquency, violence, and substance use. FFT focuses on altering interactions among family members and seeks to improve the functioning of the family unit. FFT is provided by individual therapists, typically in the home setting, and focuses on increasing family problem solving skills, enhancing emotional connection, and strengthening the parental ability to provide appropriate structure, guidance, and limits to their children. FFT generally requires 8 to 12 hours of direct service to youth and their families, and generally no more than 26 hours for the most severe problem situations.

**Multi-Systemic Therapy**

This is an intensive home-based intervention for chronic, violent, or substance abusing juvenile offenders, ages 12 to 17. Trained therapists work with the youth and his or her family. The MST intervention is based on several factors, including an emphasis on addressing the causes of delinquency. The treatment services are delivered in the youth's home, school, and community settings, with a strong focus on treatment adherence and program fidelity. Service duration averages 60 hours of contact over four months. Each MST therapist works in a team of four therapists and carries a caseload of four to six families.

**Aggression Replacement Training**

This program is a cognitive-behavioural intervention that attempts to reduce the anti-social behaviour, and increase the pro-social behaviour, of juvenile offenders. ART has three components. In the "anger control" component, participants learn what triggers their anger and how to control their reactions. The "skill-streaming" behavioural component teaches a series of pro-social skills through modelling, role playing, and performance feedback. In the "moral reasoning" component, participants work through cognitive conflict through "dilemma" discussion groups. The program is run in groups of 8 to 10 juvenile offenders, which helps keep the per participant cost lower than individually-focused interventions.

**Juvenile Boot Camp to offset institutional time**

These programs aim to: (i) serve as cost-effective alternative to institutionalisation, (ii) promote discipline through physical conditioning and teamwork, (iii) instil moral values and a work ethic, (iii) promote literacy and increase academic achievement, (iv) reduce drug and alcohol abuse, (v) encourage participants to become law-abiding citizens, and (vi) ensure that offenders are held accountable for their actions.

**Juvenile sex offender treatment**

Most of these programs are of recent origin and follow primarily a cognitive-behavioural approach to treatment.

**Interagency coordination programs**

The "treatment" involves devoting resources to coordinating existing multi-agency resources in the community and focusing those resources on youth. The purpose of this intervention approach is to use existing resources in the community more effectively. This approach has sometimes been called "wraparound" services.

**Scared Straight**

These programs typically take young juvenile offenders to an adult prison where they are lectured by adult offenders about how their life will turn out if they don't change their ways.

**Other family-based therapy programs**

These programs employ a family-based approach to counselling, somewhat similar to the approaches taken in MST and FFT. While the individual programs differ from each other, they are grouped because the underlying approach involved working with both the youth and his or her family members.

**Diversion programs with services (v regular juvenile court or v simple release)**

These programs are juvenile court diversion programs where providing services to the youth was an important element. These programs are usually designed for low risk, first time juvenile offenders who would otherwise have their cases handled formally in the juvenile court. This is a diverse set of programs that include citizen accountability boards and counselling services provided by other social service agencies.

Source: Washington State Institute for Public Policy, 2001

Table 3.3 presents the results of the meta-analyses and cost-estimates, with all monetary values in 2007 dollars (adjusted for inflation) and converted into Australian dollars (1 \$US = 1.15 \$AUS). Ten of the interventions were economically efficient because of reductions in offending and were anticipated to produce savings for taxpayers: (i) multidimensional treatment foster care, (ii) adolescent diversion project, (iii) family integrated transitions, (iv) functional family therapy for probationers, (v) multi-systemic therapy, (vi) aggression replacement training, (vii) teen courts, (viii) interagency coordination programs, (ix) restorative justice for low risk offenders, and (x) juvenile drug courts. Although cost-benefits were not calculated, other interventions that resulted in significant reductions in offending included counselling/psychotherapy for juvenile offenders, juvenile education programs, other family-based therapy programs, team child, and juvenile behaviour modification programs. The remaining interventions were not found to result in sizable reductions in offending, although some of these could result in savings because of their use instead of detention (i.e.: juvenile boot camp to offset institutional time, intensive probation as alternative to detention).

**Table 3.3: Washington State Institute for Public Policy Meta-analyses of Criminal Justice Interventions**

Intervention Program	Effect on Crime Outcomes (Number of evidenced based studies % change is based on in parentheses)	Proportion of Cost Attributable to Crime Reduction Per Participant (Net Direct Cost of the Program in parentheses)	Benefits and Costs (Per Participant, 2007 Dollars)			
			Benefits to Crime Victims	Benefits to Tax Payers	Costs (marginal cost compared to cost of alternatives)	Benefits minus costs per participant
<i>Multidimensional Treatment Foster Care (v. regular group care)</i>						
Chamberlain (1990) Chamberlain, Fisher, & Moore (2002) Leve, Chamberlain, & Reid (2005)	-22.0% (3)	\$38,577 (\$2,846)	\$61,086	\$38,795	\$8,186	\$91,696
<i>Adolescent Diversion Project (for low risk offenders)</i>						
Blakely (1981) Davidson & Redner (1988) Emshoff & Blakely (1983)	-19.9% (6)	\$2,387 (\$1,579)	\$28,674	\$21,460	\$2,255	\$47,879
<i>Family Integrated Transitions</i>						
Aos (2004)	-13.0% (1)	\$11,675	\$36,193	\$22,985	\$11,392	\$47,788
<i>Functional Family Therapy on Probation</i>						
Alexander & Parsons (1973) Barton, Alexander, Waldron, Turner & Warburton (1985) Gordon, Graves & Arbuthnot (1995) Hansson (1998) Klein, Alexander & Parsons (1977)	-15.9% (7)	\$2,792 (\$2,998)	\$23,017	\$17,229	\$2,741	\$37,505

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Intervention Program	Effect on Crime Outcomes (Number of evidenced based studies % change is based on in parentheses)	Proportion of Cost Attributable to Crime Reduction Per Participant (Net Direct Cost of the Program in parentheses)	Benefits and Costs (Per Participant, 2007 Dollars)			
			Benefits to Crime Victims	Benefits to Tax Payers	Costs (marginal cost compared to cost of alternatives)	Benefits minus costs per participant
<i>Multi-Systemic Therapy</i>						
Borduin, Henggeler, Blaske & Stein (1990)						
Borduin & Schaeffer (2001)						
Cunningham (2002)						
Henggeler, Halliday-Boykins, Cunningham, Randall, Shapiro, & Chapman (2006)						
Henggeler, Clingempeel, Brondino, & Pickrel (2002)		\$5,026				
Henggeler, Melton, Brondino, Scherer & Hanley (1997)	-10.5% (10)	(\$6,579)	\$15,151	\$11,341	\$5,026	\$21,467
Henggeler, Melton, Smith, Schonwald & Hanley (1993)						
Ogden & Halliday-Boykins (2004)						
Schaeffer & Borduin (2005)						
Timmons-Mitchell, Bender, Kishna & Mitchell (2006)						
<i>Aggression Replacement Training</i>						
Barnoski (2004)		\$1,057				
Gibbs (1995)	-7.3% (4)	(\$1,024)	\$10,487	\$7,849	\$1,058	\$17,279
Goldstein & Glick (1995)						
<i>Teen Courts</i>						
Butts, Buck & Coggeshall (2002)						
Hissong (1991)						
North Carolina Administrative Office of the Courts (1995)	-11.1% (5)	\$1,123	\$6,962	\$4,995	\$1,103	\$10,853
<i>Juvenile Boot Camp to offset institutional time</i>						
Aloisi & LeBaron (2001)						
Barnoski (2004)						
Botcher & Ezell (2005)						
Florida Department of Juvenile Justice (1996a, 1996b)		\$48,771				
Florida Department of Juvenile Justice (1997a, 1997b, 1997c)	0% (14)	(\$21,395)	0	0	-\$9,520	\$9,520
Peters, Thomas & Zamberlan (1997)						
Trulson, Triplett & Snell (2001)						
Zhang (2000)						
<i>Juvenile sex offender treatment</i>						
Borduin, Henggeler, Blaske & Stein (1990)						
Borduin, Schaeffer & Heiblum (2000)						
Guarino-Ghezzi & Kimball (1998)	-10.2% (5)	(\$13,760)	\$38,323	\$9,874	\$38,971	\$9,227
Lab, Shields & Schondel (1993)						
Worling & Curwen (2000)						
<i>Restorative Justice for low risk offenders</i>						
Evje & Cushman (2000)						
Luke & Lind (1998)						
McCold & Wachtel (1998)						
McGarrell (2001)						
Niemeyer & Shichor (1996)						
Nugent & Paddock (1996)						
Rowe (2002)						
Roy (2003)	-8.7% (21)	\$1,056	\$5,455	\$3,913	\$1,037	\$8,329
Schneider (1986)						
Sherman, Strang & Woods (2000)						
Stone, Helms & Edgeworth (1998)						
Umbreit (1994)						
Wade, Swenson, Miller, & Sager (2004)						
Wiinamaki (1997)						

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Intervention Program	Effect on Crime Outcomes (Number of evidenced based studies % change is based on in parentheses)	Proportion of Cost Attributable to Crime Reduction Per Participant (Net Direct Cost of the Program in parentheses)	Benefits and Costs (Per Participant, 2007 Dollars)			
			Benefits to Crime Victims	Benefits to Tax Payers	Costs (marginal cost compared to cost of alternatives)	Benefits minus costs per participant
<i>Interagency coordination programs</i>						
Barnoski (2004)						
Bottoms (1995)						
California Board of Corrections (2002)						
Carney & Buttell (2003)						
Fagan & Reinerman (1991)						
Giblin (2002)						
Howard, Mish, Burke & Pennell (2002)	-2.5% (15)	\$242	\$3,635	\$2,720	\$242	\$6,113
King County Juvenile Justice Evaluation Workgroup (2002)		(\$836)				
Lane, Turner, Fain & Sehgal (2005)						
Little, Kogan, Bullock & Van Der Laan (2004)						
National Council on Crime and Delinquency (1987)						
Tolan, Perry, Shelley & Jones (1987)						
Zhang & Zhang (2005)						
<i>Juvenile Drug Courts</i>						
Anspach, Ferguson & Phillips (2003)						
Byrnes & Hickert, 2004)						
Carey (2004)						
Gilmore, Rodriguez & Webb (2005)						
Hartmann, Rhineberger, Gregory, Mullins, Tollini & Williams (2003)						
Henggeler, Halliday-Boykins, Cunningham, Randall, Shapiro & Chapman (2006)	-3.5% (15)	\$3,332	\$4,988	\$3,733	\$3,274	\$5,447
Huff, Stageberg, Wilson & Moore (n.d.)						
Latessa, Shaffer & Lowenkamp (2002)						
LeGrice (2003)						
Nebraska Crime Commission (2004)						
O'Connell, Nestlerode & Miller (1999)						
Parsons & Byrnes (n.d.)						
Pitts & Guerin (2004)						
<i>Regular surveillance orientated parole (v no parole supervision)</i>						
Drake & Barnoski (2006)	0% (2)	\$1,446			\$1,415	-\$1,415
Jackson (1983)						
<i>Juvenile intensive probation supervision programs (v regular probation caseloads)</i>						
Barnoski (2003)	0% (3)	(\$3,099)			\$1,884	-\$1,884
Land, McCall & Parker (1994)						
Robertson, Grimes & Rogers (2001)						
<i>Juvenile wilderness challenge</i>						
Castellano & Soderstrom (1992)						
Cytrynbaum & Ken (1975)						
Deschenes & Greenwood (1998)						
Elrod & Minor (1992)						
Hileman (1979)	0% (9)	\$3,700			\$3,636	-\$3,636
Kelly & Baer (1971)						
Metametrics (1984)						
Willman & Chun (1973)						
Winterdyk & Roesch (1982)						

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Intervention Program	Effect on Crime Outcomes (Number of evidenced based studies % change is based on in parentheses)	Proportion of Cost Attributable to Crime Reduction Per Participant (Net Direct Cost of the Program in parentheses)	Benefits and Costs (Per Participant, 2007 Dollars)			
			Benefits to Crime Victims	Benefits to Tax Payers	Costs (marginal cost compared to cost of alternatives)	Benefits minus costs per participant
<i>Juvenile intensive parole supervision (v regular parole caseloads)</i>						
Barnoski (2002)						
Greenwood, Deschenes, Piper & Adams (1993)						
Rodriguez-Labarca & O'Connell (2004)	0% (10)	\$10,461 (\$3,655)			\$7,614	-\$7,614
Schwitzgebel & Baer (1967)						
Sealock, Gottfredson & Gallagher (1997)						
Sontheimer & Goodstein (1993)						
Weibush, Wagner, McNulty & Wang (2005)						
<i>Scared Straight</i>						
Buckner & Meda (1983)						
Cook & Spirrison (1992)						
Finchkenauer & Gavin (1999)						
Greater Egypt Regional Planning & Development Commission (1979)						
Lewis (1983)	+6.8% (10)	\$72 (\$72)	-\$9,847	-\$7,370	\$69	-\$17,287
Locke, Johnson, Mirigin-Ramp, Atwater & Gerrard (1986)						
Michigan Department of Corrections (1967)						
Orchowsky & Taylor (1981)						
Vreeland (1981)						
Yarborough (1979)						
<i>Counselling/psychotherapy for juvenile offenders</i>						
Lee & Olejnik (1981)						
Persons (1967)	-18.9% (16)		\$27,257	\$20,401		
Shivrattan (1988)						
Sowles & Gill (1970)						
Thambidurai (1980)						
<i>Juvenile education programs</i>						
Bednar, Zelhart, Hreathouse & Weinberg (1970)						
Odell (1974)	-17.5% (3)		\$48,537	\$30,825		
Texas Youth Commission (1993)						
<i>Other family-based therapy programs</i>						
Bank, Marlowe, Reid, Patterson & Weinrott (1991)						
Byles & Maurice (1979)						
Gruher (1979)						
Hinton (2004)						
McPherson, McDonald & Ryer (1983)						
Metzger (1997)	-12.2% (12)	(\$2,132)	\$17,687	\$13,238		
Moore (1987)						
Quinn & Van Dyke (2004)						
Schwitzgebel & Kolb (1964)						
Shore & Massimo (1979)						
Spence & Marzillier (1981)						
Stringfield (1977)						
<i>Team Child</i>						
Ezell (1997)	-10.9% (2)		\$6,788	\$4,869		
<i>Juvenile behaviour modification</i>						
Jesness (1975)	-8.2% (4)		\$22,714	\$14,424		
Sarason (1978)						
<i>Life skills education programs for juvenile offenders</i>						
Department of the Youth Authority, State of California (1985)	-2.7% (3)		\$7,591	\$4,822		
Josi & Sechrest (1999)						

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Intervention Program	Effect on Crime Outcomes (Number of evidenced based studies % change is based on in parentheses)	Proportion of Cost Attributable to Crime Reduction Per Participant (Net Direct Cost of the Program in parentheses)	Benefits and Costs (Per Participant, 2007 Dollars)			
			Benefits to Crime Victims	Benefits to Tax Payers	Costs (marginal cost compared to cost of alternatives)	Benefits minus costs per participant
<i>Diversion programs with services (v regular juvenile court)</i>						
Baron, Feeney & Thornton (1973)						
Crofoot (1987)						
Davidson & Redner (1988)						
Dunford, Osgood & Weichselbaum (1982)						
Howard (1997)						
Kelly, Schulman & Lunch (1976)						
King, Holmes, Henderson & Latessa (2001)						
Koch (1986)						
Lipsey, Cordray & Berger (1981)	-2.7% (20)	(-\$176)	\$1,698	\$1,219		
Myers, Burton, Sanders, Donat, Cheney, Fitzpatrick, & Monaco (2000)						
Palmer & Lewis (1980)						
Quay & Love (1977)						
Rausch (1983)						
Regoli, Wilderman & Pogrebin (1985)						
Severy & Whitaker (1982)						
Stratton (1975)						
Wiebush (1985)						
Wooldredge, Hartman, Latessa & Holmes (1994)						
<i>Juvenile cognitive-behavioural treatment</i>						
Bottcher (1985)						
Cann, Falshaw, Nugent & Friendship (2005)						
Guerra & Slaby (1990)						
Hubbard & Latessa (2004)						
Leeman, Gibbs & Fuller (1993)	-2.5% (8)		\$3,680	\$2,755		
Mitchell & Palmer (2004)						
Pullen (1996)						
Safety, Division of Criminal Justice						
Robertson, Grimes & Rogers (2001).						
<i>Court supervision vs. simple release without services</i>						
Davidson & Redner (1988)						
Dunford, Osgood & Weichselbaum (1982)						
Koch (1986)	0% (8)					
National Council on Crime and Delinquency (1987)						
Patrick & Marsh (2005)						
Severy & Whitaker (1982)						
<i>Diversion programs with services (v simple release)</i>						
Davidson & Redner (1988)						
Dunford, Osgood & Weichselbaum (1982)						
Koch (1986)	0% (7)					
Lipsey, Cordray & Berger (1981)						
Severy & Whitaker (1982)						
<i>Juvenile intensive probation (as alternative to incarceration)</i>						
Barton & Butts (1990)						
Deschenes & Greenwood (1998)	0% (5)	\$3,268				
Gottfredson & Barton (1993)		(-\$25,631)				
Lerman (1975)						
Weibush (1993)						
<i>Guided group interaction</i>						
Allen, Dubin, Pilnick & Youtz (1970)						
Empey & Erickson (1972)	0% (4)					
Empey & Lubeck (1971)						
Stephenson & Scarpitti (1974)						

Adapted from Washington State Institute for Public Policy, 2001, 2006

### **3.3. Criminal Justice Strategies**

The six interventions that were anticipated to result in the largest savings for taxpayers by the Washington State Institute for Public Policy (2006) were diversion using “change agents”, functional family therapy, family integrated transitions, aggression replacement training, multi-systemic therapy, and teen courts. This section will review additional evidence concerning the efficacy of diversionary and rehabilitation programs. Diversionary programs that will be examined include cautioning, conferencing, bail, speciality courts, probation/parole, and community restraints. Rehabilitation and treatment programs examined in more depth include functional family therapy, family integrated transitions, and multi-systemic therapy. The review will conclude by commenting on the efficacy of incapacitation as a means of reducing juvenile offending.

#### ***3.3.1. Diversion Programs***

While the diversionary programs included in the Washington State Institute for Public Policy’s meta-analysis were all based on the use of “change agents”, many other programs can be classified as diversionary. Broadly, diversion involves any process that diverts or channels out individuals from entering or continuing in the formal justice system, thereby reducing the volume of individuals that come into contact with the system (Chapin & Griffin, 2005; Hayes & Daly, 2004; Hedderman & Hough, 2006). There are four different types of diversionary practices, including: (i) *true diversion*, where law enforcement agencies handle youth informally; (ii) *referral service and follow-up*, where youth are referred prior to adjudication to treatment sources outside of the justice system; (iii) *minimisation of penetration*, where contact with the justice system is minimised; and (iv) *channelling to non-court institutions*, where individuals are involved in interventions without passing through court processes (Whitehead & Lab, 2001).

Diversion practices may include police cautioning, juvenile conferencing or mediation, bail programs, probation, and other forms of case management or supervision in the community (AIC, 2002; Polk et al., 2003). Diversionary practices are usually contingent on particular concessions being made by the offender, such as an admission of guilt, agreement to participate in a treatment program, or to avoid engaging in criminal behaviour (Hedderman & Hough, 2006). Failure to comply with the conditions imposed as a requirement of participation in diversionary processes usually leads to re-entry into the formal justice system.



Diversion from formal justice system processing and sanctions is argued to be an effective method of managing and preventing juvenile crime for a number of reasons. In terms of benefits to the community and society, diversion has the potential to reduce the load on juvenile courts, reduce the consumption of resources by the juvenile justice system, diminish the degree of social control juvenile courts wield, and reduce the stigma or labelling effects attached to justice system involvement (Chapin & Griffin, 2005). Perhaps most importantly is the potential of diversionary programs to reduce the criminogenic effects of the justice system on subsequent criminal behaviour. Prior involvement with the criminal justice system is a potent predictor of recidivism (Carcach & Leverett, 1999; Chen et al., 2005; Hua et al., 2006; Latimer, 2001). However, diversionary practices have been criticised on the grounds of net widening, where it is believed that the boundaries of social control will be expanded and individuals that would not have otherwise come into contact with justice processes will be drawn into the system (Chapin & Griffin, 2005).

#### Police Cautioning and Conferencing

A recent review of diversionary practices in Australia (Polk et al., 2003) found that police cautioning was the most widely used form of diversion for juveniles in Australia, although there was some variation between the jurisdictions in terms of technology and practice. Several police cautioning models were identified, including police cautioning out of the justice system, police cautioning with referral to other programs, and police cautioning with conditions. A number of common features of cautioning were found across jurisdictions, including the requirement of sufficient evidence to establish an offence, admission by the young offender of the allegations, consent of the offender and a willingness to engage in cautioning, the limiting of cautioning to first-time and non-serious offenders, and the use of interview sessions involving police officers, the offender, and parents, guardians, or other representatives of the offender. Cautioning can be seen as an intervention at the gateway to the criminal justice system, where primary responsibility lies with police in detecting criminal offences. Police control the cautioning programs in Australian jurisdictions, with their practices governed to some extent by legislation.

Conferencing is the second major form of diversion from the justice system for juvenile offenders in Australia, with all jurisdictions implementing some form of conferencing (Polk et al., 2003). Conferencing may occur at earlier points of the justice process (i.e.: police referred) or may occur as individual's progress further into the system (i.e.: court referred). Conferencing is a process where a young offender, supporters of the offender, the victim and their supporters, a police officer and a

conference convenor come together to discuss the offence and its impact on the victim, the supporters involved and the wider community (Daly, 2001). The conference participants attempt to reach an agreement on the sanctions or reparations required of the offender to both the victim and community (Daly, 2001). Furthermore, negotiations are conducted on how best to reintegrate the offender back into his/her family and community (Daly, 2001). As with cautioning, there are a number of different models of conferencing utilised in Australia, including those organised and run by the police, those run by organisations outside of the justice system, and those that are provided as a post-court option (Polk et al., 2003).

Several Australian studies have explored the efficacy of cautioning and conferencing. These studies have compared recidivism rates between young people who underwent different processes, including comparisons between those that underwent:

- Cautioning and appearing in court (Dennison, Stewart, & Hurren, 2006),
- Conferencing and appearing in court (Sherman, Strang, & Woods, 2000; Luke & Lind, 2002)
- Cautioning and conferencing (Vignaendra & Fitzgerald, 2006),
- Conferencing and probation (Griffiths, 1999), and
- Cautioning, conferencing, and court appearances (Cunningham, 2007).

Evidence indicates that cautioning and conferencing of low risk first time offenders can result in reductions in recidivism, although it is acknowledged that young people who appear in court may have engaged in more serious offending (Cunningham, 2007; Dennison et al., 2006). Unfortunately, few of the studies have explored referral patterns or the efficacy of cautioning or conferencing on the basis of Indigenous status, primarily because this information was not recorded in administrative databases until January 2003. However, available information suggests that Indigenous offenders are less likely to be diverted from the system and that Indigenous young people are more likely to re-appear when diverted than non-Indigenous.

In Queensland, an offender cohort study compared recidivism rates between those that were cautioned and those that appeared in court. Findings indicated that 31% of young people who received a caution for their first offence (n=14,573) had re-contact with the justice system compared with 42% of people who were eligible for the program but appeared in court (n=1,634). An examination of the types of offences that resulted in a court appearance rather than a caution indicated that offensive language, offensive behaviour, disorderly conduct, resist or hinder police

officer or justice official offences were typically referred to court. It was acknowledged that these offences challenge the authority of police or the criminal justice system.

Sherman et al's (2000) study examined the effectiveness of restorative justice conferencing in a study known as the Reintegrative Shaming Experiments (RISE) which was conducted in Canberra. The study was based on the random assignment of cases to participate in conferencing or court treatments and explored recidivism of those processed through standard court processes against diversionary conferences. Two offence types were examined that involved young offenders, juvenile property offending with personal victims and juvenile shoplifting offences and there was a one year follow-up period. No differences were found between the conferenced and court processed groups for juvenile property offending with personal victims. Furthermore, while those conferenced for juvenile shoplifting offences detected by shop security had lower rates of re-offending after participation when compared to the control group, this was not statistically significant and no differences were found between the groups in rates of offending when one year before and after measures were considered. Cost analyses are currently underway to assess whether conferencing is more efficient in dealing with youth crime than courts in terms of resources consumed.

Luke and Lind's (2002) study compared recidivism rates of young people who participated in a conference in NSW between April 1998 and April 1999 with recidivism rates of young people who attended court during the same period. The study measured recidivism by examining subsequent court appearances for a proven criminal offence and the follow-up period ranged from 27 to 39 months. Survival analyses indicated that those who participated in conferencing survived longer offence free when compared to the court groups. Those who attended a conference had a lower rate of reappearance when compared with those who were processed through the courts. Analyses indicated that both the risk of re-offending and the rate of reappearances per year during the follow-up period were approximately 15-20% lower among those who participated in a conference compared to those who appeared in court. One interpretation of this result was that the lower level of re-offending for conferences may be partly due to the selection of less serious offenders into such diversion programs (Luke & Lind, 2002). However, this was most likely not the case, given that when such factors as gender, age, offence type, Indigenous status, and prior offending were controlled for, the differences in re-offending rates between those participating in conferences and those appearing before a court still remained.

Vignaendra and Fitzgerald's (2006) study compared the effect of police cautioning and conferencing in New South Wales on the proportion of young offenders who subsequently re-offended or received a custodial sentence within a five year period. Two cohorts of young offenders participated in the study; the first was cautioned by NSW police in 1999 and the second participated in a youth justice conference in NSW in 1999. Findings indicated that 42% of youth who received a police caution in 1999 re-offended within the five year study period, while 58% of those who completed a youth justice conference re-offended in the same time period. However, these rates of re-offending appear to be lower than those youth who first appear in a Children's Court, suggesting that the diversionary practices do have some impact of recidivism. In terms of custodial sentences, 5% of the caution cohort had received a custodial sentence in the five years, while 11% of the conferencing cohort had received a custodial sentence during the five year study period. The fact that the caution cohort had greater efficacy may be attributable to differences between the groups, as the caution group were more likely than the conference group to be female (30% versus 17%), were younger, and less likely to be charged with serious offences such as offences against the person (13% versus 18%) or property damage (11% versus 17%).

Griffith (1999) compared recidivism rates of young people who participated in a conference in Victoria with rates for a similar group on probation. In Victoria, group conferencing is a pre-sentence model, where a young offender who has pleaded guilty to an offence may be diverted from entering a criminal court. The evaluation of the program examined recidivism using a 12 month follow-up period. No significant differences were found in re-offending, although those receiving probation were more likely to receive further supervisory orders. In terms of cost, the evaluation indicated that the cost of conferencing was comparable to probation. It was concluded that the major benefit of conferencing was its ability to engage those individuals most affected by offending by young people (Griffiths, 1999).

Cunningham (2007) explored the efficacy of pre-court diversion in the Northern Territory, comparing cautioning, conferencing, and court appearances. There were 3,597 young people apprehended by police between August 2000 and August 2005. Overall, three quarters (76%) did not re-offend within 12 months of their initial diversion or court appearance. Young people who appeared in court were more likely to re-offend (39%) than those that attended a conference (21%) or received a warning (19%) within 12 months. It was found that juveniles who committed property

offences and attended court were more likely to re-offend than those diverted and that this group consisted of the more serious property offences or were persistent offenders.

While cautioning and conferencing programs are being increasingly evaluated within Australia, more research is required to determine the efficacy of these programs, particularly for Indigenous young people. The use of conferencing has increased dramatically in Queensland from about 700 during 2004 to 2,000 during 2006. However, there is a lack of evidence about who attends conferences and for what types of offences, or indeed whether efficacy varies based on offence seriousness. Also, while conferencing is usually conducted in community settings, there is some evidence emerging that such practices are also being carried out in detention centres. The need to more fully compare cautioning and conferencing with traditional court processing in terms of who is undergoing these processes and based on recidivism is clearly evident given the large number of young people who are diverted through these processes.

### Bail Programs

Bail has also been utilised as a form of diversion utilised by the juvenile justice system, since there are a large number of juvenile offenders that are held in remand while awaiting court appearances, despite the fact that the majority of such individuals receive non-custodial sentences (Polk et al., 2003). Such a situation means that significant resources are unnecessarily consumed by pre-trial detention of young offenders. Polk et al, (2003) report that a number of bail programs have been implemented in some Australian jurisdictions (Queensland, Western Australia and Victoria) aimed at diverting young offenders from remand in an effort to avoid the unnecessary consumption of resources and the potential negative effects of incarceration. Such programs enable the provision of varying levels of assistance to young people, enable young people to demonstrate that they can remain in the community without offending, and have been shown to be effective at removing young offenders from detention by reducing the number of juveniles placed on remand while awaiting trial (Polk et al., 2003). Evidence about the efficacy of bail programs is clearly required and could focus on offences committed by young people while they are on bail and recidivism post-sentence. Such a study could compare those that are granted normal bail with those that are granted bail with the provision of services and attempt to match the groups based on risk.

### Speciality Courts

In Australia, there are a number of specialty court programs operating that focus on specific forms of criminal behaviour. Both Western Australia and New South Wales have specialty drug courts for juvenile offenders (Payne, 2005). Drug courts operate from a treatment orientation, where young offenders apprehended for drug offences are diverted from formal criminal justice processing, with their substance use the target for intervention (Payne, 2005; Sherman et al., 1997). The assumption is that by reducing a drug user's dependence on illicit substances through various forms of rehabilitation, they will be less likely to be involved in criminal behaviour. Many drug courts combine treatment with surveillance, where participants are required to submit to frequent drug tests to ensure they are not using illicit substances, and also participate in various treatment programs. Treatments may range from cognitive-behavioural interventions aimed at modifying maladaptive behaviours, thoughts and emotions, detoxification, and various pharmacotherapeutic treatments. In Australia, the treatment component of drug court interventions is usually provided in the community (Payne, 2005). The aim of the NSW Youth Drug Court (YDC) pilot program was to reduce the drug use and offending behaviour of juvenile offenders charged with serious offences where substance use was a factor (Flick & Eardley, 2001). While no quantitative data is available concerning the efficacy of the program, qualitative data obtained from participants indicates that they viewed the program positively (Flick & Eardley, 2001). In their review of effective interventions Sherman et al, (1997) reported that while there was little empirical research examining the effectiveness of drug courts in reducing recidivism, early results appear to be promising.

Another form of specialty courts are teen courts, which have been implemented in the United States as a response to juvenile offending and may be viewed as falling between diversionary procedures for minor/first time offences and formalised court processes for more serious offences/offenders (Forgays & DeMilio, 2005; Harrison, Maupin, & Mays, 2001; Minor, Wells, Soderstrom, Bingham, & Williamson, 1999). As a diversionary intervention itself, teen courts have the potential to diminish the stigmatising effects of contact with formal justice systems and also reduce the workload of the formal system (Harrison et al., 2001). Those juveniles referred to teen courts are predominately first-time offenders who have committed minor offences such as shoplifting, possession of alcohol, and vandalism (Harrison et al., 2001). Teen courts with dispositional functions may be both pre- and post-adjudicatory, where the aim is to hold juvenile offenders responsible for their actions and to facilitate the acquisition of knowledge concerning the legal process through interaction with peers and adult officials (Minor et al., 1999). Peers are responsible

for determining the conditions for diversion or the sentence to be imposed on juvenile offenders (Minor et al., 1999). Sanctions are usually community service orders or orders to provide restitution for damages caused by offending behaviour.

The peer-jury approach as an alternative to traditional court sanctioning is premised on social control and social learning theories, where it is believed that young people may be more responsive to social sanctions and controls imposed by peers (Forgays & DeMilio, 2005). The basic argument is that juvenile offenders are more likely to curb their antisocial behaviour when sanctions are imposed by peers as opposed to adults (Forgays & DeMilio, 2005). Positive peer pressure is argued to act as a more potent social control than the pressure exerted on juvenile offenders by the traditional justice system. Sanctions aimed at encouraging socially appropriate behaviour are based on restorative justice principles, where the purpose of sanctioning is to restore individuals back into their community (Forgays & DeMilio, 2005). Peer sanctions are hypothesised to exert greater social control on future antisocial behaviour, as peers can act as positive social models for pro-social behaviour. Furthermore, the public admission of guilt before peers and the acceptance of sanctions imposed by peers is argued to lead to a more positive reengagement with pro-social peer groups (Forgays & DeMilio, 2005). The completion of the tasks of accepting guilt and acceptance of a sanction imposed by peers is argued to empower juvenile offenders to engage in pro-social behaviour (Forgays & DeMilio, 2005).

There are few outcome evaluation studies completed on teen courts, however the available evidence suggests that such interventions are effective at reducing rates of recidivism and are associated with high sentence completion rates among participants, compared to those who participated in other diversionary interventions or formal criminal justice interventions (Forgays & DeMilio, 2005; Harrison et al., 2001; Minor et al., 1999). In a study of 26 repeat teen offenders referred to a teen court, 81 percent were found to complete their sentences, and 12.5 percent of the completers re-offended with theft charges (Forgays & DeMilio, 2005). This was compared to a random sample of 26 first-time court diversion offenders, where 50 percent successfully completed their diversion requirements and 38 percent of those completers were subsequently charged with theft or assault offences (Forgays & DeMilio, 2005). The available evidence indicates that those participants who have had prior referrals to other diversionary or court based programs are more likely to recidivate than first-time referrals (Harrison et al., 2001). Additionally, participants in teen courts with prior records of offending have been found to have lower rates of sentence completion (Minor et al.,

1999). Few evaluations compare the outcomes of those participating in teen courts with other groups of sanctioned juvenile offenders. Therefore, evaluations reporting evidence of low recidivism rates for teen court participants should be interpreted with caution.

### Probation/Parole

Probation and parole have traditionally been viewed as alternatives to incarceration, in an effort to divert offenders from incarceration and reduce the administrative pressures resulting from increasing prison populations (Geerken & Hayes, 1993). Probation and parole may be viewed as intermediate sanctions imposed by juvenile justice systems, with probation acting as a front-end program and parole acting as a back-end program. Probation is generally applied in lieu of incarceration while parole is generally applied to those entering the community after incapacitation. Probation and parole are sanctions that are usually employed as alternatives to incarceration and generally involve a level of supervision by criminal justice agents while allowing the offender to remain in the community. While placed on probation or parole, offenders may be required to engage in a number of activities, including frequent reporting to justice agents, involvement in treatment programs, community service, and also be required to refrain from engaging in certain activities.

The strengths of probation and parole include their flexibility to be shaped to the needs of the individual offender and the ability of services to be delivered in the community, where offenders have access to social support networks (Hoge, 2001). However, probation and parole do not avoid the potentially harmful effects of labelling and stigmatisation and there is also the possibility that increased supervision may lead to higher rates of recidivism due to better detection of deviant behaviour. Furthermore, while the provision of treatment in combination with probation or parole may be a goal, not all offenders will participate in treatment programs because of the limited availability of resources (Hoge, 2001).

The available empirical evidence indicates that probation and parole interventions have little effect on the recidivism rates of offenders when compared to control groups (Barton & Butts, 1990; Friendship & Debidin, 2006; Gottfredson, Mitchell-Herzfeld, & Flanagan, 1982; Lane, Turner, Fain, & Sehgal, 2005; Venezia, 1972). However, this conclusion must be interpreted in light of the reality that few sound evaluations of juvenile probation and parole have been conducted concerning their effectiveness as a sentencing alternative. The available evidence indicates that failure rates are



highly variable across samples, jurisdictions, studies, and the criterion against which failure is defined, although the range of failure rates appears to be 12 to 65 percent for adult felony offenders (Geerken & Hayes, 1993). Evidence also indicates that reintegration programs focusing on the treatment of offenders through addressing criminogenic needs may be more effective than those programs that focus predominately on intensive supervision and surveillance (MacKenzie, 2006).

### Community Restraints

Community restraint interventions generally aim to increase the supervision and control of offenders while they are in the community, thus avoiding any deleterious effects of incarceration and keeping offenders within their social support networks. Interventions within this category may include intensive supervision, house arrest, electronic monitoring, and halfway houses (Sherman et al., 1997). These interventions can be viewed as intermediate between traditional probation and incarceration (Sherman et al, 1997).. The rationale behind community restraint interventions is that they function to restrict an individual's capacity and opportunity to engage in criminal behaviour. Such interventions are also likely to reduce the strain on resources that would occur if offenders placed on community restraint programs were placed in correctional institutions. Community restraint programs aim to fulfil multiple purposes, including providing a system of graduated punishments that may be more appropriate than the traditional responses of probation or incarceration, provide more intensive levels of restraint and accountability over offenders when compared to probation or parole, and also provide enhanced levels of treatment or service catering for the needs of offenders (Sherman et al., 1997).

Sherman et al, (1997) report that there is little evidence indicating that community restraint interventions are effective at reducing criminal behaviour when measured by official record data. Evaluations of such interventions must take into consideration the increased probability of detecting subsequent offences due to the increased level of surveillance over offenders. In reviewing the outcomes of intensive community supervision programs, which may combine such interventions as electronic monitoring, home confinement, and increased offender-agent contacts, Sherman et al, (1997) concluded that increases in surveillance and other restraints on offenders were not associated with decreases in recidivism but were associated with increases in technical violations of the requirements of the programs. Furthermore, evidence suggested that intensive community supervision programs may lead to reductions in recidivism through the requirement of treatment participation, although the empirical research had not been rigorously evaluated.

In a study that evaluated the effectiveness of 14 Intensive Supervision Programs (ISP) in the United States, where recidivism was measured using arrests and technical violations of probation/parole, there were no significant differences between the ISP participants and the control groups at 1 year follow-up, with 37 percent of the ISP and 33 percent of the control group participants arrested (Petersilia & Turner, 1993). However, when technical violations were examined, the average violation rate was 65 percent for the ISP participants, compared to 38 percent for the control group. Petersilia et al (1993) concluded that the available evidence did not support the notion that increased surveillance deterred offenders from engaging in further criminal activity. Currently, there is no evidence indicating that rates of recidivism are reduced by increasing surveillance and restraints over known offenders (MacKenzie, 2006). However, evidence indicates that rates of recidivism can be reduced through combining ISP type interventions and treatment services, though further research is needed to examine this effect (MacKenzie, 2006).

In general, research examining the outcomes of community restraint programs, mainly in the United States, indicate that such programs often fail to reduce recidivism and that research often fails to adequately assess the therapeutic components of such programs, which is unfortunate given that those programs that incorporate treatment may be more useful in reducing recidivism (Meisel, 2001; Sherman et al., 1997).

### ***3.3.2. Rehabilitation/Treatment***

In theory, one of the major goals of the juvenile justice system is to rehabilitate young offenders in an effort to curb their deviant behaviour (Hoge, 2001; Sherman et al., 1997). From the welfare perspective, the role of the juvenile justice system is to respond to the diverse needs of offenders, providing the resources needed to develop in a more pro-social direction. Contact with the justice system provides a useful opportunity to intervene in the lives of individuals with numerous problems and can be effective for both those who enter voluntary or are coerced to enter treatment (Sherman et al., 1997). In practice, however, participation in rehabilitation treatments offered by juvenile justice systems depends heavily on the resources expended on such interventions, where places in programs may be limited. It is also frequently the case that offenders that are placed on remand (awaiting court hearings) do not have access to treatment programs.

Within the juvenile justice system, rehabilitation programs can be offered in community or institutional settings, although evidence suggests that programs conducted in the community are more successful at reducing recidivism than programs conducted in institutional settings (Andrews et al., 1990; Hoge, 2001; Lipsey, 1999; Lipsey & Wilson, 1998). Community-based treatments aim to address the criminogenic needs of young offenders in the context where such needs are located (Hoge, 2001). However, an issue with community-based treatments is that it is often difficult to coordinate services to serve the social, psychological, educational, and medical needs of young offenders because such services are provided by a diverse range of agencies that are not necessarily connected (Hoge, 2001). Institutional-based treatments can help to prepare or reintegrate offenders back into the community and provide them with the resources to function in a pro-social manner (Abrams, Kim, & Anderson-Nathe, 2005). Evidence suggests that the greatest reductions in recidivism resulting from treatment occur for high-risk groups of offenders rather than lower risk groups (Caldwell & Van Rybroek, 2005; Dowden & Andrews, 1999, 2000).

Empirical evidence concerning the effectiveness of treatment programs consistently highlights that for treatment to be effective, it must utilise clinically relevant and psychologically informed evidence concerning the principles of risk, need, and responsivity and be designed and delivered in developmentally appropriate ways (Day et al., 2003; Dowden & Andrews, 2000). The risk principle asserts that the level of treatment must match the risk level (i.e.: for recidivism) of offenders, where higher risk offenders should receive the more extensive and intensive treatment services and lower-risk offenders receive minimal services (Dowden & Andrews, 2000).

The need principle makes the distinction between criminogenic and non-criminogenic needs, where criminogenic needs refer to those dynamic factors that when changed will result in a reduction in criminal behaviour while non-criminogenic needs are those dynamic factors that when changed are not associated with changes in criminal behaviour (Dowden & Andrews, 2000). Treatment appears to be most effective when criminogenic needs are addressed. Programs that target criminogenic needs include substance abuse treatment, family functioning programs, fostering programs, and programs that focus on peer groups, social skills, cognitive skills and educational needs (Day et al., 2003; Howells & Day, 1999).

The principle of responsivity asserts that the characteristics of treatment program delivery should be matched to the responding and learning styles of offenders to be most effective (Dowden &

Andrews, 2000). The implication for the responsivity principle in an Australian context is that treatment programs need to be developed specifically for Indigenous offenders to deal with their unique criminogenic and non-criminogenic needs. Treatment programs that appear to be most effective are those that acknowledge the principles of risk, need and responsivity, although treatment providers and evaluators must recognise that antisocial behaviour among juveniles is difficult to treat.

A major issue in the Australian juvenile justice context is that there is a lack of research examining the impact of treatment interventions with Indigenous juvenile offenders (Day et al., 2003; Howells & Day, 1999). Although Indigenous offenders are over-represented in the juvenile justice system, they are under-represented in treatment programs and do not respond well to interventions, suggesting that culturally specific programs need to be developed (Day et al., 2003). It may be the case that effective treatment interventions for non-Indigenous offenders may not necessarily be appropriate for Indigenous offenders, as they may have fundamentally different criminogenic needs. For example, alcohol is a significant factor in Indigenous violent behaviour and as such treatment programs may seek to address substance use problems among violent Indigenous offenders (Day et al., 2003). It has been argued that Indigenous offenders are likely to have higher levels of both criminogenic and non-criminogenic needs when compared to other groups of offenders. Factors relevant to the needs of young Indigenous offenders may include: the potential for alienation in the predominately non-Indigenous Australian justice system, the relatively young age of Indigenous offenders, the isolation of young people due to their geographical separation from family/cultural group, the transitory nature of social supports, lower levels of functional literacy, specific health needs, the high profile of Indigenous individuals upon release, the social status of offending among peers, and the difficult circumstances encountered upon release (Day et al., 2003, p. 74).

The meta-analyses conducted by the Washington State Institute for Public Policy (2006) indicated that there were several promising forms of treatment, including Functional Family Therapy (FFT), Family Integrated Transitions (FIT), Aggression Replacement Training (ART), Multi-Systemic Therapy (MST), and Multidimensional Treatment Foster Care (MTFC). A recent review conducted by Welsh and Farrington (2006) provides additional information about the effectiveness of several of these interventions (Table 3.4). Consistent with the Institute for Public Policy's meta-analyses, these programs have resulted in sizable reductions in recidivism. However, Welsh and Farrington point out that the one large-scale independent evaluation of MST conducted by Leschied and

Cunningham (2002) in the Canadian province of Ontario found that it increased convictions within 12 months by 10%. Unfortunately, two recent meta-analyses that have been conducted examining the efficacy of MST have come to diametrically opposite conclusions, with one finding it is effective (Curtis, Ronan, & Borduin, 2004) and another finding that it was not (Littell, 2005).

**Table 3.4: Efficacy of Treatment Programs**

Type of program	Publication, Location	Initial Sample	Conditions	Results (N)	% difference
<b>Functional Family Therapy</b>	Alexander & Parsons (1973), Salt Lake City, Utah	86 delinquents Age 13-16	E = Functional family therapy C = Alternative family therapy/no treatment	6-18 months arrests E 26.1% (46) C = 55.0% (40)	-53% *
	Gordon (1995), 5 Ohio counties	52 delinquents Age 16-17	E = Functional family therapy C = standard probation	16 months recommitments to institution E = 33.3% (27) C 64.0% (25)	-48% *
<b>Family Integrated Transitions</b>	Aos (2004), Washington	273 delinquents Up to age 17	E = MST and other programs C = usual parole services	18 months reconvictions E 27.0% (104) C 40.6% (169)	-33% *
<b>Multi-Systemic Therapy</b>	Henggeler et al., (1993), South Carolina	84 Delinquents Mean age 15	E = MST C = court ordered services and mental health	2 years arrest rate E 60.5% (43) C 80.5% (41)	-25% **
	Borduin et al. (1995), Columbia, Missouri	176 delinquents Age 12-17	E = MST C = Individual therapy	4 year arrests E 26.1% (92) C 34.3% (84)	-63% *
	Henggeler et al., (1997), South Carolina	155 delinquents Age 10-17	E = MST C = Probation	1.7 year arrest rate EM 0.89 (70) CM 1.20 (70)	-26%
	Henggeler et al., (1999), Charleston, South Carolina	116 psychiatric adolescents Mean age 13	E = MST C = Hospitalisation	4 months arrest rate EB 0.46 (57) EA 0.33 (57) CB 0.30 (56) CA 0.27 (56)	-20%
	Hengler et al., (2002), Charleston, South Carolina	118 delinquents Age 12 to 17	E = MST C = Usual community services	4 year conviction rate EM 0.34 (43) CM 0.77 (37)	-56% *
	Leschied and Cunningham (2002), London, Canada	409 delinquents Age 12-17	E = MST C = Probation	12 months criminal convictions E 41.2% (211) C 37.6% (198)	+10%
<b>Multidimensional Treatment Foster Care</b>	Chamberlain and Reid (1998), US	79 delinquents Age 12-17	E = parental training C = group care	Arrests per year EB 8.5 (37) EA 2.6 (37) CB 6.7 (42) CA 5.4 (42)	-62% *

Notes: \*  $p < .05$ , \*\*  $p < .01$ ; E = experimental; C = control; SR = self reported; MST = multi-systemic therapy; EB = experimental before; CB = control before; EA = experimental after; CA = control after; EM = experimental mean; CM = control mean. Adapted from Adapted from Welsh and Farrington, 2006

### ***3.3.3. Incapacitation***

Incapacitation sanctions can take many forms, although all involve removing or limiting an offender's access to the community. Incapacitation is also argued to operate as a deterrent to prevent the individual who is incapacitated from committing future offences (specific deterrence) and prevent others in the community committing offences (general deterrence). The prevention of crime through incapacitation is the primary justification for imprisonment of known offenders (MacKenzie, 2006). Incapacitation interventions may also integrate other treatment or rehabilitation programs into the service in an effort to confront the diverse needs of juvenile offenders. Incapacitation sanctions are generally reserved for the most serious offenders and offences or those most at risk for recidivism.

The characteristics of correctional facilities vary widely across jurisdictions and there is considerable variability between institutions which makes it difficult to evaluate the effects of incarceration on specific outcomes, including recidivism. In general, empirical evidence from impact evaluations indicates that punitive sanctions imposed by justice systems including incapacitation are generally less effective than treatment services, especially when treatment is provided in a community setting (Dowden & Andrews, 1999; Hoge, 2001). In reviewing the psychological literature on the effects of punishment, Hoge (2001) argues that for incapacitation as a punishment to be effective, it must be immediate and clearly linked to the criminal behaviour, which is frequently not achieved by juvenile justice systems where there are substantial delays between apprehending young offenders and the application of sanctioning. Hoge (2001) further proposes that punishment must be meaningful to the offender in order to be effective, which is frequently not achieved by juvenile justice systems.

Any evaluation of the effectiveness of incapacitation interventions must consider the potential of criminogenic effects involved with confinement in correctional facilities, such as labelling/stigmatisation effects, the potential for the consolidation of deviant peer networks, and the limiting of pro-social avenues for participation in society (Hoge, 2001). Young offenders may be particularly vulnerable to the negative effects inherent in correctional institutions, where the developmental outcomes may be particularly damaging and lock young individuals into a deviant pathway (Grant & Gal, 1999). There are also a number of problems with the use of incapacitation in general as a means of preventing crime, including the substantial amount of resources consumed in housing offenders and building facilities to accommodate increasing imprisonment rates, as well

as the issues of incarcerating offenders at the end of their criminal careers who would not necessarily go on to commit further crimes.

In their review of effective crime prevention interventions, Sherman et al, (1997) concluded that in general, incapacitation policies were effective at preventing crime mainly due to the isolation of offenders from the community which results in the removal of opportunities to engage in criminal behaviour. The selective incapacitation of the small group of offenders who commit a disproportionately large number of crimes during the peak of their offending careers would be desirable, since such a strategy would prevent the greatest volume of crime using the least amount of resources possible. However, there are significant problems with the use of selective incapacitation, most importantly concerning the prediction and detection of those offenders who will go on to have highly active and intense criminal careers. Currently, prediction and detection techniques are in a continuing state of development, where false-positives (i.e., prediction of high rate of offending when the individual will not become a high-rate offender) could be particularly harmful to potential offender's lives.

In a review of court and correctional interventions aimed at reducing the criminal activities of known offenders and delinquents, MacKenzie (2006) concluded that the majority of studies examining the effectiveness of incapacitation found small but positive crime reduction effects. However, the effectiveness of incapacitation interventions at reducing criminal behaviour must be weighed against the associated increases in prison populations and the costs involved in such increases (MacKenzie, 2006). It may be that the crime prevention effects of incapacitation may not be worth the additional costs associated with building and maintaining prisons and housing prisoners (MacKenzie, 2006). It is difficult to assess the true effect of incapacitation on crime prevention, given that researchers must estimate offender's potential rates of offending while they are incarcerated and after they re-enter the community from prior offending histories. Thus, crimes prevented from incapacitation must be calculated from estimated rates of offending.

### **3.4. Conclusion**

Juvenile offending is a complex issue that is not likely to be addressed through a single intervention. Young people who come to the attention of the justice system have diverse needs that

must be attended to if interventions are to have any effect on subsequent offending. A sole focus on punitive sanctions is not likely to have any significant effects on re-offending if offender's risks and needs are not confronted. Furthermore, no one intervention will be appropriate for all offenders in all situations (Sherman et al., 1997). Juvenile justice systems must be committed to careful program planning, use of evidence based interventions, and a dedication to empirical evaluation of program outcomes. As a social control agent, the juvenile justice system is responsible not only for ensuring public safety, but also the care of the young people that come under its jurisdiction. In fulfilling these dual roles, responses to juvenile crime must combine both punitive and rehabilitative aspects. However, balancing punitive and rehabilitative responses to juvenile crime is a difficult issue that is not likely to be resolved in the near future. The task is to balance the level of sanctioning required to achieve justice and public protection, while also providing the level of treatment necessary to address risks and needs of offenders. The question remains as to whether the justice system can effectively provide treatment while also administering punishment.

Due to the diversity of individuals that come into contact with the justice system, programming must have a significant degree of flexibility. Individuals are likely to be unique in their risks and needs and respond differently to different interventions. There is a need to tailor interventions to particular offenders in particular situations. In the Australian context, there is a definite need for the juvenile justice system to develop effective methods of responding to Indigenous juvenile offenders, given that they are over-represented in the formal system and the substantial level of needs that are not currently being addressed adequately by the system. Knowledge about the efficacy of criminal justice programming aimed at reducing juvenile offending generally and particularly for Indigenous young people is limited. It is difficult to draw any firm conclusions about the efficacy of interventions at reducing recidivism due to the lack of and poor methodological rigour of research. However, available evidence indicates that certain programs/interventions are somewhat effective at reducing juvenile re-offending.

The Washington State Institute for Public Policy (2001, 2004, 2006) meta-analyses indicated that ten criminal justice interventions produced savings for taxpayers in the long-term because of the impact they have on recidivism, most notably diversion through the use of "change agents", functional family therapy, family integrated transitions, aggression replacement training, multi-systemic therapy, and teen courts. A review of diversionary schemes in Australia indicated that cautioning and conferencing resulted in small reductions in offending for low-risk first time



offenders when compared to traditional court processing. The efficacy of functional family therapy, family integrated transitions, and multidimensional treatment foster care as a means of reducing recidivism were further supported by an examination of several studies that have been conducted, although the efficacy of multi-systemic therapy remains open to debate. While incapacitation reduces offending through limiting an offender's access to the community in the short term, it comes at considerable cost and the criminogenic effects of incapacitation may result in increased offending once a person is released.

## **Chapter 4. The Efficacy of Community Crime Prevention**

Community crime prevention is outlined in this chapter along with an examination of several community based strategies that are frequently implemented with the aim of reducing offending. Unfortunately, most of these strategies have not been adequately evaluated to determine whether they have an impact on delinquency. These strategies include:

- (i) community policing,
- (ii) community mobilisation,
- (iii) community economic development,
- (iv) mentoring,
- (v) school after-hours programs,
- (vi) job/vocational training,
- (vii) weed and seed programs,
- (viii) recreation interventions, and
- (ix) removing criminogenic commodities.

### **4.1. Community Crime Prevention**

Within the criminological literature, it has been well established that the ecological environments in which individuals are embedded exert pervasive influences upon behaviour independently of individual factors (Kelling, 2005; Kubrin & Weitzer, 2003; Oberwittler, 2004; Triplett, Gainey, & Sun, 2003). This highlights the importance of examining factors within community environments, which may contribute to create and maintain antisocial behaviour among individual residents, in an effort to develop effective intervention programs at a community level to prevent crime and other forms of antisocial behaviour (Oberwittler, 2004; Sampson, Morenoff, & Earls, 1999).

Community refers to a number of concepts, although for present purposes may be described as an organisation or collective of individuals which may have common identity, geography, issue or institutional relations (Labonte, 1997). Community-based prevention aims to confront crime at a 'grass roots' level, specifically in particular local contexts, to address those factors within that

context that may be causing and maintaining crime (Hope, 2001; Kelly & Caputo, 2006; Labonte, 1997). Hope (1997, pp. 422) describes community-based prevention as “a framework for action which establishes the necessary social preconditions through which individual criminal motivation or behaviour can be changed through routine practice”. However, it must be kept in mind that community crime prevention can be conceptualised a number of ways, and there exist a number of different theoretical perspectives through which it may be conceptualised (Kelling, 2005).

In recent years, the use of the term community crime prevention has been used to represent a broad range of theories and initiatives that seek to examine the role of social contexts and processes in crime at local levels and the role of collectives in solving mutual problems (Sabol et al., 2004; Sampson, 2002). The rationale for these perspectives is based on the large body of research that consistently finds that high crime rates are typically concentrated in geographical areas characterised by structural disadvantage, including poverty, segregation, residential instability and racial/ethnic heterogeneity (Oberwittler, 2004; Sabol et al., 2004; Silver & Miller, 2004; Triplett et al., 2003). These consistent correlations between crime and social structure allow for the identification of the structural characteristics of high crime localities, although do not explain what and how social processes within these localities lead to the development and maintenance of criminality (Oberwittler, 2004; Sabol et al., 2004).

Contemporary research has focused on the properties of high crime ecological contexts in an effort to understand and prevent crime in neighbourhoods where criminality is an issue (Oberwittler, 2004). Such research has led to a proliferation in the development of theories and theoretical mechanisms hypothesised to explain the link between structural disadvantage and crime (Almgren, 2005; Kubrin & Weitzer, 2003; Silver & Miller, 2004). The discovery of the mechanisms responsible for generating and maintaining crime in local contexts would inform the development of effective community prevention programs and is therefore a critical undertaking, since positive neighbourhood outcomes can be linked to the social processes operating within these neighbourhoods (Scott, 2002). The discovery of the social processes responsible for positive community development is critical to the broader issue of crime in society (Scott, 2002).

#### ***4.1.1. Theoretical Underpinnings***

Social disorganisation theory emphasises the relationship between social structure, social control and crime, while postulating that the social processes of particular neighbourhoods are the most important factors in explaining crime with a focus on places rather than individuals (Kubrin & Weitzer, 2003). According to this theory, “social disorganisation refers to the inability of a community to realise common goals and solve chronic problems” (Kubrin & Weitzer, 2003, p. 374) as a result of a breakdown of social control mechanisms within a community, which then leads to an inability to defend against criminal behaviour (Triplett et al., 2003). Social disorganisation is argued to result from structural disadvantage, which weakens the social control mechanisms within a locality and in turn leads to crime (Kubrin & Weitzer, 2003; Silver & Miller, 2004).

Social control mechanisms within a given community which are normative social processes that reduce crime and disorder are hypothesised to mediate the relationship between social disorganisation and crime in that community and can be both formal and informal (Kubrin & Weitzer, 2003; Sampson, 2002). Social control is embedded in various levels of social institutions, being private, parochial and public levels (Triplett et al., 2003). Private institutions consist of family, friends and intimate others and are based upon personal ties of affection (Triplett et al., 2003). Public institutions are the formal agencies of the state based upon civil ties, and determine the levels of control public institutions exert, while providing citizens with access to public resources (Triplett et al., 2003). Parochial institutions fall between public and private institutions and are concerned with the control of social behaviour in relation to the less intimate relationships among neighbours and acquaintances (Triplett et al., 2003). Each of the levels of social institutions work together to produce social control in a given community, where each institution is seen to interact with the other to create a symbiotic social landscape.

There are a bewildering array of specific social processes theorised to act as social control mechanisms. The notion of social capital is a broad ranging term under which all other processes could be subsumed. Although social capital has been operationalised in various ways, it generally refers to the intangible resources produced among a collective from the social relationships among them that facilitate action for mutual benefit that is seen as being vital to the cognitive and social development of individuals within that collective (Kubrin & Weitzer, 2003; Salmi & Kivivuori, 2006; Triplett et al., 2003). It is assumed that the breadth and strength of relationships directly effects community social control (Kubrin & Weitzer, 2003).

Social capital can be viewed as necessary for effective social control, since it defines the boundaries of legitimate behaviour, provides the resources for rewarding legitimate and punishing deviant behaviour, and allows for effective interactions between individuals and institutions in an effort to realise common goals and values (Triplett et al., 2003). Social capital is built upon mutual obligations, shared norms, the ability to enforce and administer sanctions, and opportunities to exchange information and is derived from the structure of social organisation rather than the attributes of individuals (Sabol et al., 2004). Therefore, social control depends heavily on the relationships among individuals in a collective and relationships among a collective and wider society, which determines the resources available to control deviant behaviour. In a study examining the association between social capital and juvenile crime, it was found that low social capital, operationalised as low parental support and teacher control, strongly predicted frequent juvenile offending even after structural and individual level factors were controlled (Salmi & Kivivuori, 2006).

Due to the broad nature of social capital, theorists have begun to break it down into its constituent parts (Salmi & Kivivuori, 2006). To illustrate the nature of social processes as an element of social capital, social ties refer to the strength and types of relationships among residents and may form the basis of initiating communication and mutual understanding among residents, facilitating the use of social resources (Kubrin & Weitzer, 2003; Salmi & Kivivuori, 2006). Strong social ties can have both positive and negative effects upon crime in communities (Oberwittler, 2004; Sabol et al., 2004). For example, strong ties among residents in disadvantaged communities may block efforts of social reorganisation due to their isolation from other communities (Sabol et al., 2004). Strong ties among deviant individuals may possibly maintain high crime levels (Sabol et al., 2004). It is argued that while strong social ties may be one factor in producing capacity to control crime in a community, it is not a sufficient condition (Sabol et al., 2004).

The notion of collective efficacy has been proposed as a social mechanism that does not include strong social ties to facilitate social control within communities (Sabol et al., 2004). Collective efficacy encompasses a willingness to act in specific situations, which social ties do not include, and involves the mechanisms of working trust and shared expectations for social control (Kubrin & Weitzer, 2003; Sampson, 2002). This resource of mutually shared expectations about the exercise of social control is argued to be the most important social process linking disadvantage to crime (Sampson, 2002). Indeed, studies indicate that areas characterised as having low collective efficacy

tend to have high crime rates, while those characterised as having high collective efficacy tend to have low crime rates, even after controlling for structural disadvantage (Sampson et al., 1999).

Overall, the study of such processes aims to identify the salient mechanisms involved in deviant behaviour within communities in an effort to empower communities to solve their own problems through the manipulation and improvement of their social resources to increase social control (Oberwittler, 2004). Community empowerment recognises that crime is intimately related to the local context and that crime can be reduced by enabling communities to develop social processes and obtain the resources necessary to combat their unique problems (Sampson et al., 1999). Community-based interventions may focus on any of the multitude of theorised social processes in an effort to decrease crime in disadvantaged communities.

#### ***4.1.2. Challenges to Implementing and Evaluating Community Interventions***

There are a number of significant challenges to implementing and evaluating community-based interventions (Hope, 2001; Kubrin & Weitzer, 2003; Oberwittler, 2004; Triplett et al., 2003). One challenge is that it is often difficult to define the boundaries of what constitutes a neighbourhood or community, creating the problem of where to implement intervention programs (Sabol et al., 2004; Sampson et al., 1999). Spatial dynamics must also be considered, since geographic areas do not operate in isolation and can be influenced by adjacent areas. Evidence suggests that crime rates and social processes in one area can affect crime and social processes in neighbouring areas (Sampson et al., 1999). Researchers must give clear operationalisations on how they define communities.

Other challenges may be present because of the specific context and unique problems in communities (Ife, 1995). Interventions aimed at producing social control are often difficult in high crime communities, due in part to the fragmentation and mistrust among residents (Hope, 2001). Ethnic/racial heterogeneity may act as a barrier to prevention efforts as different groups are likely to hold different beliefs and values about the control of deviant behaviour and by hindering communication and blocking the sharing of resources (Davis & Henderson, 2003; Ife, 1995). High residential mobility may further impede prevention, since residents may not stay long enough in a community to fully benefit from programs or be motivated to participate due to a weak sense of attachment to their community (Silver & Miller, 2004).

Community-based programs are difficult to evaluate due to their complexity. Such programs involve a vast array of individuals, groups, and organisations that are differentially affected by changing social, economic, and political contexts (Jack, 2005). There is a need for precise definitions about the social processes involved and difficulties are often faced operationalising concepts and exploring the interactions among these social processes (Kubrin & Weitzer, 2003; Triplett et al., 2003). Further, there are a multitude of outcomes against which programs may be evaluated that may not necessarily be related to criminal behaviour, such as improved education and better relationships among community members.

Evaluations of community-based interventions are still in their infancy, where problems exist in terms of the conception, design and implementation of evaluation strategies (McCord et al., 2001). There are few well-established standards against which outcomes can be assessed when compared to interventions targeted toward individuals (McCord et al., 2001). For example, it is difficult to quantify changes at a community level and how these changes impact upon individuals. Furthermore, it is difficult to obtain appropriate control groups for community-based intervention evaluations, where random assignment and comparisons across communities may be difficult to achieve (McCord et al., 2001). Evaluation of community interventions may also be problematic due to the small sample sizes of specific programs, meaning that statistical inferences concerning the effect of interventions cannot be reliably drawn (McCord et al., 2001).

## **4.2. Community-Based Interventions**

There are a range of community-based interventions that may be used to reduce juvenile offending. This section will discuss nine community-based strategies and present evidence about the efficacy of each strategy at reducing offending. The efficacy of many strategies at reducing offending have not been explored because of the difficulties involved in conducting rigorous empirical evaluations of community-based interventions. The nine strategies that will be reviewed include: (i) community policing, (ii) community mobilisation, (iii) community economic development, (iv) mentoring, (v) school after-hours programs, (vi) job/vocational training, (vii) weed and seed, (xiii) recreation interventions, and (ix) removing criminogenic commodities.

There exists significant overlap between different forms of community-based interventions in terms of what they seek to achieve and the mechanisms through which change occurs. Such intervention strategies are predominately focused on the entity of the community and seek to enhance communities control over young people. However, other interventions may be focused on the individual in an effort to enhance the relationship with their communities. Further interventions may aim to improve relationships between social institutions (e.g., schools, police) and the community in an effort to increase social capital. Most community-based interventions are focused on improving intangible properties of communities which are thought to directly or indirectly impact on juvenile offending. Thus, empirical measurement of changes in community level constructs following interventions is at present an inexact science, where results must be interpreted with caution.

#### ***4.2.1. Community Policing***

Community Policing (CP) is a philosophical concept that describes a heterogeneous set of policing styles and programs, and operates under a number of names, including problem-oriented policing, community-oriented policing, neighbourhood oriented policing and quality of life policing (Colvin & Goh, 2006; Kerley & Benson, 2000). CP programs are most predominant in the United States (Anderson, Sabatelli, & Trachtenberg, 2007). Philosophically, CP operates on the assumption that both citizens and police share the responsibility for public order and safety within a community, rather than the police holding a “monopoly” on the responsibility for the regulation and control of criminal behaviour (Grinc, 1994; Pattavina et al., 2006). The community and police are viewed as co-producers of crime prevention.

Fielding (2005, p. 460), broadly defined CP as “(A)n iconic style of policing in which the police are close to the public, know their concerns from regular everyday contacts, and act on them in accord with the community’s wishes”. However, an exact definition of CP remains elusive. The basic aim of CP is to facilitate the development of closer police-community relationships, where it is believed that such a relationship will better enable police to respond to and prevent criminal behaviour at a local level with an understanding of local issues (Colvin & Goh, 2006; Fielding, 2005). Through CP, it is argued that police may be in a position to better understand local needs and problems and respond to them in an appropriate and focused manner.



Police officers are generally placed in a community on a permanent and long-term basis to work *proactively* with individual community members in an effort to identify and solve problems together (Colvin & Goh, 2006). This is contrasted to the *reactive* approach to community problems that drives traditional policing, where criminal incidents are dealt with as they arise (Colvin & Goh, 2006). It is believed that those communities characterised by social disorganisation experience conflictual relationships with police, where a reciprocal relationship of cynicism may exist (Pattavina et al., 2006).

Most empirical examinations of CP have focused on community member's perceptions of community policing, crime rates, fear of crime, and police-community relations and have produced mixed results (Kerley & Benson, 2000; Xu, Fiedler, & Flaming, 2005). It has been argued that empirical research has largely disregarded examination of outcome variables at a community-level, where positive or negative effects on the broader community are seldom taken into consideration (Kerley & Benson, 2000). At present there are no consistent findings indicating that CP initiatives are effective at reducing rates of crime and fear of crime in communities, where positive results tend to be statistically non-significant (Grinc, 1994; Kerley & Benson, 2000).

The available evidence indicates that CP initiatives may be more effective in those communities that are already organised and cohesive to a degree, and less effective in those severely disadvantaged communities where interventions are needed most (Kerley & Benson, 2000). It has been argued that since the empirical evidence does not support the efficacy of CP initiatives, it may be that the theory behind such programs may be flawed. That is, it may be that enhanced relationships between communities and police may do little to reduce crime rates or fear of crime. Furthermore, little empirical work has focused on establishing whether CP initiatives actually strengthen community organisation or cohesion and police-community relationships, which is problematic given that these are the mechanisms through which change is theorised to occur (Kerley & Benson, 2000).

Despite the predominately insignificant findings in the empirical research for the efficacy of CP initiatives, there is limited support for the hypothesis that CP is positively associated with increased social capital (Scott, 2002; Xu et al., 2005). That is, CP that focuses on developing relations with community members appears to have the potential to facilitate the development of greater cohesion, trust, and efficacy within neighbourhoods (Scott, 2002). Social capital that develops through police-

community relations is thought to act as an important social resource that community members may draw upon to collectively diminish neighbourhood problems (Scott, 2002).

The involvement of community members is a significant issue in implementing CP initiatives, which is problematic given that facilitation of the development of strengthened community relations is the main mechanism through which reductions in crime rates are theorised to occur. Communities are likely to be composed by a diverse range of individuals from different social groups. Community involvement may not necessarily be representative of the individuals living in a neighbourhood, where those most severely disadvantaged may be less likely to participate in initiatives. As a result, community problems targeted are likely to not address the most pressing issues and further compound the problems of the most disadvantaged.

There is a lack of quantitative evidence concerning the effectiveness of CP interventions in reducing levels of crime in a given locality. No empirical evidence was found that examined the efficacy of CP initiatives in preventing or reducing juvenile delinquency. The lack of empirical evidence for the effectiveness of CP programs may be partly a result of a failure to either measure or produce changes in community relations and involvement in initiatives. Thus, further research is needed that explicitly attends to the community level processes that are theorised to underlie CP initiatives in order to determine such programs effectiveness in reducing criminal behaviour in specific localities. Furthermore, there is a need for empirical research that examines the development of community processes over time.

#### ***4.2.2. Community Mobilisation***

Community mobilisation or empowerment initiatives are similar to CP programs, in that they seek to facilitate the development of social capital (social resources) to effectively confront and solve community-level problems (Laverack, 2001; Welsh & Hoshi, 2006). A key aspect of community mobilisation initiatives is the involvement of key community figures or organisations as mobilising forces to increase participation in efforts to affect social change (Bolland & McCallum, 2002). Reductions in rates of crime in a community may be one of numerous goals for community mobilisation programs.

Community empowerment is conceptualised as a dynamic process of progression along a continuum; from individual to collective action (Laverack, 2001). Community empowerment is a means of allowing individuals and groups to mobilise and realise common goals in moving toward social and political change through participation in social processes (Bolland & McCallum, 2002; Laverack, 2001). Broadly, the assumption behind such programs is that community involvement in addressing community problems and needs is a more effective means of confronting these problems and needs. That is, interventions are accessible to individuals at a local level to ensure that those with the greatest investment in the community are directly involved in identifying and addressing needs and problems. Mobilisation initiatives may be aimed at confronting and attempting to change specific behaviours, practices or policies through the participation and education of key stakeholders including community members, voluntary sector and central and local government representatives (Greenaway & Witten, 2005). It is thought that through empowering communities with the skills, knowledge and other resources necessary to fulfil needs and confront problems, changes in community processes and structures are more likely to be long-term (Greenaway & Witten, 2005).

In evaluating the effectiveness of community mobilisation initiatives, researchers must be aware that programs have diverse features that are implemented to create change. Greenaway and Witten (2005) conducted a meta-analysis of ten community action projects in New Zealand in an effort to identify the processes and activities that produced change, as well as the barriers and enhancers to creating change. The processes and activities that were required for effective community action and change included: building skilled leadership, accessing adequate resourcing, enabling infrastructural development, creating committed strategic support and advocacy from government agencies and community organisations, enabling effective communication, vision building, skilled facilitation of people and processes, networking to build relationships, communication and knowledge, accessing mentors, affective planning, and making opportunities for critical reflection (Greenaway & Witten, 2005).

One of the major findings was that projects were implemented much more effectively with the support of individuals with community development expertise, and the skills necessary to facilitate the implementation of the processes and activities previously mentioned (Greenaway & Witten, 2005). Projects struggled if they did not have access to skilled individuals. A fundamental aspect of producing change was identified to be the development of transformative relationships between

individuals and organisations to facilitate a shared understanding of working together to produce mutual goals (Greenaway & Witten, 2005). In the initial stages of community mobilisation projects, barriers to producing meaningful change included a lack of clear purpose, where goals, processes, and activities aimed at achieving goals were ambiguous (Greenaway & Witten, 2005). Long-term funding was found to be a barrier in successfully maintaining the operation of community mobilisation projects, as many projects were supported by only short-term funding. Furthermore, projects often faced the challenges of balancing short-term action with long-term planning and strategy development (Greenaway & Witten, 2005). It was found that no project included in the analysis had a clear strategy for maintaining sustainability over the long-term.

Welsh and Hoshi (2006) reviewed four community mobilisation crime prevention strategies carried out in the United States in high-crime areas. The methodological rigour of the strategies was generally found to be poor. It was concluded that the available evidence is insufficient to establish whether community mobilisation strategies are effective at reducing crime. Further research is needed to establish the effectiveness of these programs in reducing crime.

Neighbourhood Watch (NW) schemes can be classified as community mobilisation initiatives that aim to unify police and community efforts to reduce crime and thus may also be classified as a form of CP. In such schemes, community members are encouraged by police to take responsibility for crime prevention through effective surveillance and control of social and physical disorder in their neighbourhoods (Fleming, 2005). At a broad level, NW schemes aim to reduce the opportunity for and vulnerability of neighbourhoods to crime by involving community volunteers in efforts to minimise preventable crime, increasing reporting of crime to police, improving personal, household and local business security levels, and identifying property in case it is stolen (Fleming, 2005). Through the involvement of community members, schemes can be tailored to suit problems unique to a specific locality.

Despite the widespread implementation of NW initiatives in Australia and internationally, there is a substantial amount of empirical evidence indicating that they are ineffective at preventing or reducing criminal activity, have a displacement effect (i.e., crime is diverted to another area), and have only moderate effects in white middle-class areas where community relations and low crime rates already exist (Fleming, 2005). It has been argued that the efficacy of NW schemes may be in

their potential to foster enhanced partnerships between police and other social institutions and the community, much the same as CP programs (Fleming, 2005).

Communities That Care (CTC) is a model of community mobilisation/empowerment based on a prevention science approach to crime that focuses on reducing risk and enhancing protective factors at a local level (Feinberg, Greenberg, Osgood, Anderson, & Babinski, 2002; Hawkins, 1999). CTC is a model that operates to guide “communities in organising and operating the promotion of positive social development for young people and prevention of youth crime” (Hawkins, 1999, p. 450). CTC programs can be described as a combined form of community and developmental prevention, since they target the community to prevent youth deviance before it manifests itself through attending to factors that may impact on the development of individuals. The prevention of youth crime is addressed by attending to factors identified by empirical research at the community, family, school and individual/peer levels that may undermine healthy youth development (Hawkins, 1999; Toumbourou, 1999).

The aim of CTC initiatives is to actively involve communities in the development and implementation of prevention programs based on identified risk and protective factors for health and behaviour problems in a specific community. Overall, the basic premise of CTC initiatives is to develop a local capacity for community prevention of youth problems through training community members to utilise an evidence-based approach to prevention. CTC has been described as a process that leads to the identification of programs that may be implemented based on the strengths and weaknesses in a community, and a means of facilitating the coordination and delivery of services to reduce risk and increase protection in an geographic locality (France & Crow, 2005). As such, CTC does not deliver services itself, but rather engages community members to implement change in local areas (France & Crow, 2005). Specifically, CTC aims to facilitate professional practice and the promotion of working relationships between agencies, involvement of community members, making more resources available to enhance or create programs to work with children and families, and to create an evidence-based approach to early intervention and prevention (Crow, France, Hacking, & Hart, 2004; France & Crow, 2005). CTC can be implemented in a way that most effectively addresses the unique profile of risk and protective factors in a specific community, thus one of the major strengths of the model is its flexibility in attending to the needs of different communities (Hawkins, 1999).

CTC programs have been predominately implemented in the United States, although CTC programs have also been implemented in the United Kingdom, Europe and Australia. The evaluation of the outcomes of CTC programs is limited owing to the difficulty of evaluating broadly conceptualised community-based initiatives (Feinberg et al., 2002). Significant resources are needed to evaluate the processes and outcomes of community-base initiatives, and issues surrounding sample sizes and randomisation of interventions further add to difficulties in conducting evaluations (Feinberg et al., 2002). Furthermore, the flexibility of CTC programs results in a situation where evaluations and comparisons between CTC initiatives may be difficult to achieve. Communities are likely to emphasise different goals and outcomes through focusing on different risk factors and programs to respond to those risk factors. The positive outcomes of CTC programs are yet to be consistently identified, given that outcomes are likely to be long-term rather than immediate (Feinberg et al., 2002). At present, there is no longitudinal empirical evidence of the long-term outcomes of CTC programs, with the majority of evaluation research focusing on the process of implementation for CTC.

Crow et al, (2004) conducted an evaluation of the UK-based CTC program. In terms of the impact of CTC programs on levels of risk and protection, evidence indicated that CTC had a positive impact. The strongest effects were found for community and family factors, where the CTC children displayed most decreases in risk and where CTC activity was greatest (Crow et al., 2004). However, the effectiveness of the CTC approach was not unequivocally supported, as positive results were only found in one of the three evaluated sites (Crow et al., 2004). There were a number of factors that were found to negatively impact on the delivery of CTC, including the withdrawal of key strategic leaders, changing personnel, ambiguous roles of personnel, loss of coordination between key personnel and local agencies, and problems in local partnerships (Crow et al., 2004).

The evaluation indicated that wide-ranging, holistic community interventions such as CTC are complex and difficult to implement in short time-frames, which is not surprising given that they attempt to create change in social structures (Crow et al., 2004). Significant resources and time are needed to implement long-term changes at a community level, which is problematic given that funding is predominately short-term and the political emphasis on immediate results (Crow et al., 2004). Perhaps one of the most important findings was that the success of the CTC program appeared to depend on the communities' readiness to implement change, where positive results

were associated with a greater willingness to change (Crow et al., 2004; Feinberg, Greenberg, & Osgood, 2004).

Evaluations of CTC programs implemented in the United States indicate that positive changes in communities resulting from the program include improved inter-agency collaboration, reduced duplication of services, co-ordinated allocation of resources, strategic targeting of prevention activities to priority risk and protective factors, increased use of research based 'promising approaches' with demonstrated effectiveness, and increased involvement of professionals, citizens and youth in community prevention activities (Office of Juvenile Justice and Delinquency Prevention (OJJDP), 1996, cited in Hawkins, 1999). Further longitudinal research is needed to establish the long-term effects CTC programs may have on communities' abilities to prevent crime.

#### ***4.2.3. Community Economic Development***

Community economic development or community capacity building refers to a wide range of activities aimed at increasing a community's social capital in an effort to prevent or reduce criminal activity (Woodhouse, 2006). Communities with high rates of criminal behaviour are generally characterised by concentrated disadvantage. Community economic development strategies are based on the premise that through addressing and ameliorating economic disadvantage in communities with high crime rates, those communities will be better able to control behaviour, prevent crime, and make neighbourhoods safer. Community capacity building activities aim to empower, enable, and promote collective action through providing communities with the resources needed that may be lacking or removing the barriers preventing communities from accessing needed resources.

Activities may include increasing material resources and economic opportunities for disadvantaged groups, producing and managing affordable low-income housing, increasing access to community services, strengthening community ties to social institutions (e.g., government agencies, police, schools), and developing the skills and knowledge of community members (Lane & Henry, 2004; McCord et al., 2001). No research has been conducted that clearly demonstrates the effectiveness of such strategies in reducing recidivism rates for juvenile offenders, although evidence suggests they are effective in reducing property crimes, which are offences juvenile offenders frequently commit

(McCord et al., 2001). Research is needed to establish the effects community economic development strategies have on juvenile offending.

#### ***4.2.4. Mentoring***

Mentor relationships are argued to be effective and powerful strategies for intervening in the lives of disadvantaged or at-risk youth to prevent criminal behaviour (Spencer, 2006). Mentoring can be broadly defined as any form of beneficial relationship that involves an experienced individual helping a less experienced individual (Wilczynski, Culvenor, Cunneen, Schwartzkoff, & Reed-Gilbert, 2003). Mentor programs generally aim to match at-risk youth with mentors, with a focus on facilitating and supporting the relationship over time (Wilczynski et al., 2003). The mentor-youth relationship is argued to be a potent means of promoting positive adolescent development in the absence of other healthy relationships, such as those between a parent and child (Spencer, 2006). At-risk children are believed to lack appropriate role models to facilitate positive development, leaving them prone to academic failure, participation in delinquent behaviour and increased risk for criminal justice system involvement, and be less likely to achieve vocationally and emotionally (Arter, 2006). Mentors may include a diverse range of volunteers from the community, and may include criminal justice professionals such as police (Arter, 2006).

The popularity of mentoring programs has grown substantially over recent decades, due in part to the increasing realisation that strong and positive relationships are essential for positive adolescent development and for promoting resiliency among at-risk youth (DuBois, Holloway, Valentine, & Cooper, 2002; Jones-Brown & Henriques, 1997; Spencer, 2006). There are a wide variety of programs that may be classified as mentoring programs that may operate independently, or as a component of a multifaceted intervention program (DuBois et al., 2002). Furthermore, mentoring programs are likely to differ according to their basic goals, the participants they target, processes and philosophies. Some programs may focus broadly on promoting positive youth development while others may focus on specific areas of functioning, including education and employment (DuBois et al., 2002; Sipe, 1999). Mentoring programs may be targeted at those at-risk for delinquency in the community or may be employed with those individuals who have come into contact with the criminal justice system. Mentoring programs are argued to have wide ranging effects on multiple areas of functioning, including emotional and behavioural functioning, academic achievement, and employment or career development (DuBois et al., 2002). This creates difficulties



for evaluations assessing the outcomes of mentoring programs, since measures must be able to capture change across a diverse range of potential outcomes (Grossman & Johnson, 1999).

Unfortunately, few mentoring programs have undergone formal empirical evaluations by external evaluators (Wilczynski et al., 2003). Most evaluations tend to be conducted by those that have implemented the program and tend to collect qualitative information. Furthermore, little evidence exists concerning the effectiveness of mentoring programs in reducing recidivism rates of juvenile offenders. DuBois et al., (2002) conducted a meta-analytic review of 55 evaluations on the effects of mentoring programs on youth, where overall results indicated that participation in mentoring produced only modest or small benefits for the average youth. The overall average effect size for mentoring programs was found to be  $d = 0.18$ , which indicated the positive effects were modest or small for program participants.

Positive effects were found for mentoring programs across a broad range of participants with varying demographic and background characteristics (age, gender, race/ethnicity, and family structure) and across a range of outcomes (DuBois et al., 2002). The most positive outcomes were found for those programs that were grounded in theoretically and empirically-based evidence concerning positive development and risk factors, and facilitated the development of strong mentor-youth relationships. However, in relation to other psychological, educational and behavioural treatments directed at children and adolescents, the effects of mentoring programs were small (DuBois et al., 2002).

The results of the meta-analysis were unable to identify any single feature or characteristic of mentor programs that produced the positive outcomes associated with participation in the programs. Rather, positive outcomes were associated with several features of the programs, including: “ongoing training for mentors; structured activities for mentors and youth as well as expectations for frequency of contact; mechanisms for support and involvement of parents; and monitoring of overall program implementation” (DuBois et al., 2002, pp. 187-188). The characteristics of the mentor-youth relationship that have been shown to produce positive outcomes include: frequency of contact, matching of youth to appropriate mentors, emotional closeness and longevity, the development of trust and effective communication, and respect and empathy for youth (DuBois et al., 2002; Sipe, 1999). Poor mentor-youth relationships are generally characterised by sporadic

contact with youth, authoritative roles, and an emphasis on behaviour change rather than the facilitation of trust and respect (Sipe, 1999).

Mentor programs appear to be most effective with those youth experiencing significant levels of individual and environmental risk or disadvantage, particularly those youth lacking positive adult or parental role models (Keating, Tomishima, Foster, & Alessandri, 2002; Sipe, 1999). Additionally, mentor programs appear to be least effective for those youth with lower levels of risk, which supports the risk principle in the provision of treatment. Overall, the available evidence suggests that mentoring is an effective intervention for at-risk youth in producing positive outcomes, particularly those youth with significant levels of risk, although further research is needed to prove unequivocally that such programs are effective. In an evaluation of a mentoring program in New Zealand involving 339 youth aged between 8 and 18 years, juvenile crime was reduced by 43 percent, with a 74.4 percent drop for those aged 13 or younger, a 46.5 percent drop for 14 year olds and a 45.3 percent decrease for 15 years olds (Harman, 2000).

Few of the proposed aims of mentor programs have been empirically supported, such as reductions in crime, antisocial behaviour and other problematic behaviours, and the enhancement of self-esteem and social skills (Wilczynski et al., 2003). Further evidence is needed concerning the effects of mentor programs on recidivism for juvenile offenders. Particularly in regards to the Australian context, there is a lack of empirical evidence supporting the effectiveness of mentoring programs, although the available evidence suggests it may be a promising strategy for reducing the future offending of youth (Wilczynski et al., 2003). Evidence suggests that mentoring may be an effective means of increasing compliance with juvenile justice orders over the short-term, is effective in reducing substance use by youth, promotes positive interpersonal relationships, and can also increase participation or performance in education, training and employment (Grossman & Johnson, 1999; Gur & Miller, 2004; Wilczynski et al., 2003). Importantly, the available evidence suggests that mentoring programs may be particularly effective for Indigenous and ethnic minority youth, since these are the groups that generally have the highest profiles of individual and environmental risks (Wilczynski et al., 2003). Mentoring programs need to be further evaluated to determine their effectiveness in responding to at-risk youth, with a focus on establishing those components of the programs that result in the most positive outcomes.

#### ***4.2.5. School/After-Hours Programs***

School after-hours programs have been developed to provide children and adolescents with supervised activities during non-school hours in an effort to prevent crime, since these are the times when juvenile offending peaks (Gottfredson, Gerstenblith, Soule, Womer, & Lu, 2004; Gottfredson, Gottfredson, & Weisman, 2001; McCord et al., 2001). Due to differences in parents work schedules and children's school schedules, children are often unsupervised for substantial periods of time. Thus, it is argued that higher rates of offending during after-school hours are a direct result of reduced levels of adult supervision. However, evidence indicates that delinquency after school hours may not be solely attributable to a lack of adult supervision, as delinquent children appear to be more delinquent at all times (Gottfredson et al., 2004; Gottfredson et al., 2001). It may be that after-school programs may find it difficult to recruit delinquent youth to participate in programs, and the provision of supervision may have little effect on their behaviour (Gottfredson et al., 2001).

There is little empirical evidence supporting the efficacy of after-hours school programs in reducing problem behaviours (Gottfredson et al., 2001). It is argued that existing research on after-school programs is too methodologically weak and sparse to comprehensively conclude that such programs are effective in reducing juvenile antisocial behaviour (Gottfredson et al., 2001). However, the available evidence suggests that programs that provide intensive after-school activities involving a diverse range of activities and incentives, or provide activities that focus on social competency skill development are the most effective in reducing problem behaviour in youth (Gottfredson et al., 2001). It appears that the effectiveness of after-school programs depends on the activities provided, with those activities focused on parental and youth needs being more effective (Cox, 1999; Gottfredson et al., 2001; Weissberg & O'Brien, 2004). Therefore, after-school programs appear to be a promising form of intervention in preventing crime if they provide more than simple supervision.

#### ***4.2.6. Job/Vocational Training***

Vocational and Educational Training (VET) programs for offenders or individuals at risk of offending have been widely used as a means of reducing recidivism and improving the lives of disadvantaged individuals (Burghardt, Schochet, McConnell, Johnson, Gritz, Glazerman, Homrighausen, & Jackson, 2001; McCord et al., 2001; Schochet, McConnell, & Burghardt, 2003; Visher, Winterfield, & Coggeshall, 2006). Evidence indicates that on average, offenders as a

population are less well educated and have fewer marketable job skills when compared to the general population (Wilson, Gallagher, & MacKenzie, 2000). VET programs are basically designed to increase employment prospects through providing job placement and/or job placement for individuals at risk of recidivism (Visser et al., 2006). Furthermore, educational programs seek to improve individuals' educational attainment to provide increased opportunities and/or access to further education or entry into meaningful work. In general, VET programs aim to improve access to employment and facilitate the development of economic self-sufficiency (Burghardt et al., 2001). Employment and educational programs have been implemented both in the community, and as components of rehabilitation in correctional institutions. The focus in this chapter will be those programs implemented in the community.

Research indicates that having a legitimate job and earning a higher wage are associated with lower rates of recidivism (Sampson & Laub, 2003b; Uggen & Massoglia, 2003; Visser et al., 2006). Furthermore, involvement with the criminal justice system is likely to limit an offenders employment opportunities, thus the provision of VET programs is a logical method of reducing recidivism. Community VET programs may be aimed at youth in an effort to improve their future employment prospects and ensure their economic stability to reduce the likelihood of engagement in criminal activity. An example of a community-based VET intervention is the US-based Job Corps, which provides intensive education, training, and support services in residential settings to youths aged between 16 and 24 years (Burghardt et al., 2001; Schochet et al., 2003). Job Corps is the largest and most comprehensive education and training program for disadvantaged youth in the US, with 60,000 new participants across 120 centres nationwide per year (Schochet et al., 2003). Job Corps is an intensive and comprehensive program that provides a range of services to youth and vocational training for a range of career options.

The Job Corps program has undergone an empirical evaluation with randomised control groups during its operation between 1995 and 1996 (Burghardt et al., 2001; Schochet et al., 2003). In addition to improved income and educational and employment credentials, Job Corps participants were found to have reduced arrest and conviction rates when compared to the control group after a 48 month follow-up period (Burghardt et al., 2001). Specifically, 29 percent of the program group were arrested during the 48-month follow-up period, compared to 33 percent of the control group. The reduced arrest and conviction rates were most pronounced for less serious offences, such as disorderly conduct and trespassing. Job Corps is a costly program, although cost-benefit analyses

indicate that it is cost effective, as it produces numerous social benefits (e.g., increased productivity, reduced burden on welfare services, less strain on the criminal justice system). Job Corps has a desirable benefit-cost ratio of 1.45, with reduced criminal justice system costs accounting for about one-quarter (29%) of the total benefits (Long, Mallar, & Thornton, 1981). Overall, it appears that VET programs have the potential to produce a wide range of beneficial outcomes to participants that are not solely limited to a reduction in offending. Further research is needed to establish the effectiveness of VET programs in reducing the offending of youth.

#### ***4.2.7. Weed and Seed Programs***

Weed and seed programs, which have predominately been implemented in the US, are programs that may combine a number of community intervention elements, including community policing, mobilisation, economic development (Bridenball & Jesilow, 2005; Dunworth & Mills, 1999). Weed and seed programs aim to increase the control a community has over criminal activity in their neighbourhoods through reducing the fear of crime and facilitating the development of social capital to manage and respond to community problems (Bridenball & Jesilow, 2005; Dunworth & Mills, 1999). Weed and seed programs operate on the belief that removing, or ‘weeding’ the most serious offenders out of neighbourhoods is the first step in community development to reduce crime in a locality (Bridenball & Jesilow, 2005).

The seed component of the programs then attempts to restore community control over crime through social and economic development, which may involve coordinating and improving community services and institutions, including family services, organised recreation, job and life-skills development, educational programs, building relations between community members and local police, and counselling and support programs (Bridenball & Jesilow, 2005). Bridenball and Jesilow (2005) argue that evaluations of weed and seed programs in the US have been inadequate, where little is known concerning the effectiveness of the programs at reducing offending in communities. Evidence indicates that the program does not have positive effects on community members’ perceptions of the threats facing their neighbourhoods, where it is possible that such programs may in fact increase community members’ fears of crime in their neighbourhoods (Bridenball & Jesilow, 2005). However, it is argued that the increased fear of criminal activity may only be a temporary and initial effect of the implementation of weed and seed programs.

A national evaluation of weed and seed programs in the US indicated that such programs may have a number of benefits, although the effectiveness of the programs appear to differ across communities (Dunworth & Mills, 1999). Pre-existing community characteristics are likely to make the implementation of programs more or less difficult, where program implementation may be hindered in those communities characterised as having poor social and institutional infrastructure, severe crime problems, geographical isolation limiting economic opportunities (e.g., access to work), and having a transient population (Dunworth & Mills, 1999). Effectiveness also appeared to be dependent on the sequencing of weeding and seeding activities, where community support was more likely to result from early seeding initiatives, sustained weeding, community policing and high-level task forces, and an active prosecutorial role (Dunworth & Mills, 1999).

Programs that targeted resources on smaller population groups and facilitated the development of active and constructive leadership in key community members also appeared to have greater success (Dunworth & Mills, 1999). In terms of the impact on crime trends, the available evidence suggested that reductions in criminal activity varied widely across program evaluation sites and criminal offences. Evaluations of weed and seed programs have predominately focused on process and implementation issues. Further research is needed to evaluate the effectiveness of weed and seed programs in reducing criminal behaviour, particularly the offending of youth.

#### ***4.2.8. Recreation Interventions***

Recreation interventions are premised on the belief that the provision of recreation activities, such as sport, can reduce the offending of youth through the promotion of personal and social development. Recreation interventions include structured sport, physical activities, and outdoor activities and aim to increase social skills, provide alternatives to antisocial behaviour and boost self-esteem (Morris, Sallybanks, & Willis, 2003). It is believed that through providing structured recreational activities, youth will have less opportunity or time to engage in antisocial behaviours in the community (Morris et al., 2003). Furthermore, recreational interventions are argued to facilitate the development of pro-social relationships and provide positive peer role models (Morris et al., 2003). Recreational interventions are believed to impact on antisocial behaviour indirectly, by acting as a mechanism through which youth may experience positive personal and social development (Morris et al., 2003).

Empirical evidence about the effectiveness of such programs is scant, although the available evidence is generally positive indicating reductions in youth antisocial behaviour, where the provision of well-structured activities for youth appears to be more important than the type of activity provided (Morris et al., 2003; Sherman et al., 1997). However, there is a lack of quality longitudinal outcome-focused data measuring the varied hypothesised impacts of recreational programs (Morris et al., 2003). There are a number of problems with recreation interventions, including the limited and short-term nature of funding, the fact that such programs do not directly target risk factors associated with juvenile antisocial behaviour, and the diversity of program content (Morris et al., 2003). It is generally believed that recreation interventions do not reduce antisocial behaviour by themselves, but rather exert their effects indirectly through facilitating the positive personal and social development of youth. There is a need for further empirical evidence using randomised control trial to support the effectiveness of recreation interventions

#### ***4.2.9. Removing Criminogenic Commodities***

The removal or restriction of criminogenic commodities or substances is an approach to community crime prevention that involves removing the proximate contributing causes of criminal activities (Sherman et al., 1997). Criminogenic commodities may include weapons, illicit substances, alcohol and money, which when present in the right circumstances can produce the necessary or sufficient causes for crime to occur (Sherman et al., 1997). From this perspective, crime prevention is achieved through removing or limiting access to criminogenic substances in an effort to restrict opportunities and remove the contributing causes of criminal activity. For example, gun buyback programs have been implemented in the US in an effort to reduce violent crimes that involve the use of firearms. However, the empirical evidence supporting the effectiveness of gun buyback programs is weak, where available evidence indicates that there is no effect on reducing violent crimes (Sherman et al., 1997). It has been argued that the money invested in such programs may be better used for other community-based interventions that have been demonstrated to be cost-effective (Sherman et al., 1997).

### 4.3. Conclusion

Logically and theoretically, community-based interventions should be highly effective methods of preventing juvenile antisocial behaviour and reducing juvenile offending by focusing on the communities in which they spend the majority of their social lives. Through attending to the ecological contexts in which individuals are situated and the factors within them that may be contributing to the development and maintenance of antisocial behaviour, juvenile crime prevention efforts may be better able to intervene in and shape the lives of juveniles in more positive directions. The evidence reviewed has indicated that the most successful interventions appear to be those that address multiple needs or deficits within a community. Additionally, the efficacy of community interventions seems to be partly dependent on existing levels of cohesion/collective efficacy within communities, as community-based interventions are likely to have stronger effects in communities with higher levels of cohesion.

There are significant methodological issues in implementing and evaluating community crime prevention initiatives, which is why the effect of many strategies on offending has not been examined or why there are sometimes contradictory findings. There is significant heterogeneity across communities in regards to an extensive range of characteristics. Thus, no one program is likely to be developed that will prove to be effective in all communities. Community-based interventions must be developed specifically for individual communities, and structured according to the unique characteristics and needs of the given locality and the individuals within it. Transferability is a major issue with community-based programs, where a program developed for a particular locality and the needs of the individuals within it, is not likely to produce equivalent effects if transferred without adaptation to another community (Jack, 2005).

A frequent theme throughout the review of the literature was the need for more empirically robust evaluation research for all community-based interventions. The evaluation literature for community-based interventions is in its infancy, since there are few reliable and valid measures of community processes. There exists limited information concerning the efficacy of community-based programs in reducing juvenile criminal behaviour, although the available evidence suggests that such interventions can produce moderate reductions in juvenile offending.



## Chapter 5. The Efficacy of Situational Crime Prevention

Situational crime prevention (SCP) entails the application of lateral thinking by any person or agency to immediately hinder any type of offending behaviour through the simple and real world solution of reducing criminal opportunities (Clarke, 1995, 1997). SCP focuses on highly specific problems such as types of offending behaviour and the opportunities in specific situations that facilitate misbehaviour at particular times or places (Clarke & Felson, 1993). Therefore, SCP can be utilised to prevent specific problems that have been identified as occurring in specific locations or at specific times. SCP identifies 25 SCP techniques that aim to increase the effort, increase the risks, reduce the rewards, reduce provocations, or remove excuses (Table 5.1). These techniques are based on opportunity theories of crime including rational choice, routine activities, and crime pattern theories that view crime as a product of interaction between an individual and the characteristics of the setting they are situated within, although criminological theory has traditionally given more weight to individual factors (Felson & Clarke, 1998). Felson and Clarke (1998, pp. v-vi) outline ten key principles of opportunity theories of crime:

1. Opportunities play a role in causing all crime
2. Crime opportunities are highly specific
3. Crime opportunities are concentrated in time and space
4. Crime opportunities depend on everyday movements of activity
5. One crime produces opportunities for another
6. Some products offer more tempting crime opportunities
7. Social and technological changes produce new crime opportunities
8. Crime can be prevented by reducing opportunities
9. Reducing opportunities does not usually displace crime
10. Focused opportunity reduction can produce wider declines in crime.

**Table 5.1: Twenty-Five Techniques of Situational Crime Prevention**

<b>Increase the Effort</b>	<b>Increase the Risks</b>	<b>Reduce the Rewards</b>	<b>Reduce Provocations</b>	<b>Remove Excuses</b>
<p>1. <i>Target Harden:</i> Steering column locks and immobilisers Anti-robbery screens Tamper-proof packaging</p>	<p>6. <i>Extend guardianship:</i> Take routine precautions: go out in group at night, leave signs of occupancy, carry phone “Cocoon” neighbourhood watch</p>	<p>11. <i>Conceal targets:</i> Off-street parking Gender-neutral phone directories Unmarked bullion trucks</p>	<p>16. <i>Reduce frustrations and stress:</i> Efficient queues and polite service Expanded seating Soothing music / muted lights</p>	<p>21. <i>Set rules:</i> Rental agreements Harassment codes Hotel registration</p>
<p>2. <i>Control access to facilities:</i> Entry phones Electronic card access Baggage screening</p>	<p>7. <i>Assist natural surveillance:</i> Improved street lighting Defensible space design Support whistleblowers</p>	<p>12. <i>Remove targets:</i> Removable car radio Women’s refuges Pre-paid cards for pay phones</p>	<p>17. <i>Avoid disputes:</i> Separate enclosures for rival soccer fans Reduce crowding in pubs Fixed cab fares</p>	<p>22. <i>Post instructions:</i> “No Parking” “Private Property” “Extinguish camp fires”</p>
<p>3. <i>Screen exits:</i> Ticket needed for exit Export documents Electronic merchandise tags</p>	<p>8. <i>Reduce anonymity:</i> Taxi driver IDs “How’s my driving?” decals School uniforms</p>	<p>13. <i>Identify property:</i> Property marking Vehicle licensing and parts marking Cattle branding</p>	<p>18. <i>Reduce emotional arousal:</i> Controls on violent pornography Enforce good behaviour on soccer field Prohibit racial slurs</p>	<p>23. <i>Alert conscience:</i> Roadside speed display boards Signatures for customs declarations “Shoplifting is stealing”</p>
<p>4. <i>Deflect offenders:</i> Street closures Separate bathrooms for women Disperse pubs</p>	<p>9. <i>Utilize place managers:</i> CCTV for double-deck buses Two clerks for convenience stores Reward vigilance</p>	<p>14. <i>Disrupt markets:</i> Monitor pawn shops Controls on classified ads License street vendors</p>	<p>19. <i>Neutralize peer pressure:</i> “Idiots drink and drive” “It’s OK to say No” Disperse troublemakers at school</p>	<p>24. <i>Assist compliance:</i> Easy library checkout Public lavatories Litter bins</p>
<p>5. <i>Control tools/weapons:</i> “Smart” guns Disabling stolen cell phones Restrict spray paint sales to juveniles</p>	<p>10. <i>Strengthen formal surveillance:</i> Red light cameras Burglar alarms Security guards</p>	<p>15. <i>Deny benefits:</i> Ink merchandise tags Graffiti cleaning Speed humps</p>	<p>20. <i>Discourage imitation:</i> Rapid repair of vandalism V-chips in TVs Censor details of modus operandi</p>	<p>25. <i>Control drugs and alcohol:</i> Breathalyzers in pubs Server intervention Alcohol-free events</p>

Source: Cornish & Clarke (2003, p. 90).

## 5.1. Theoretical Foundations of Situational Crime Prevention

Opportunity theories, such as rational choice, routine activities, and crime pattern theories highlight the importance of characteristics within situations and the environment in understanding criminal behaviour and form the theoretical basis for SCP strategies. These three theories overlap considerably due to their focus on criminal opportunities. Each theory considers how criminal opportunities are created and the actions of offenders while they are committing crime. Rational choice theory can be seen to focus more on the individual, while routine activities focuses more on society, and crime pattern theory focuses predominantly on local geographic areas (Felson & Clarke, 1998). In unison, the theories can help us better understand how societies and localities change crime opportunities, with individuals responding to these changes (Felson & Clarke, 1998). Through changing criminal opportunities, which is what SCP seeks to achieve, levels of criminal behaviour are likely to decrease.

### 5.1.1. *Rational Choice Perspective*

From the rational choice perspective, behaviour is a function of individual's subjective calculations of the costs and benefits associated with the perceived consequences of behaviour within a situational context (Clarke & Felson, 1993). The perspective focuses explicitly on offender's decision-making processes. The rational choice perspective assumes that deviant behaviour is a motivated form of behaviour driven by utility to meet an individual's needs, such as material possessions. Individuals attempt to fulfil their needs through decisions or choices to engage in particular activities, with decisions being constrained by such factors as time, ability, and individual-level deficits (e.g., impulsivity, low IQ) and the availability and quality of information relevant to such decisions (Clarke & Felson, 1993; Cornish & Clarke, 1986; Felson & Clarke, 1998). Decisions to engage in deviant behaviour are situationally specific, where the availability and type of information to be used by individuals in making decisions will differ by offences, and because different offences have different purposes (Clarke & Felson, 1993). Offenders will rarely know all of the various costs and benefits of engaging in a specific criminal behaviour. Decision-making is tied to the situation; it is motivated by a particular goal, and opportunities to achieve the goal within that situation, which are all dependent on the potential offender's appraisal of the perceived costs and benefits associated with performing the criminal act.

The decision to engage in deviant behaviour depends on opportunities for deviance in the environment, and the individual's appraisal of those opportunities. A nonpathological view of offenders is taken, where the normative nature of most deviant behaviour is recognised, with behaviour a result of decisions based on cost-benefit analyses of situational circumstances and opportunities (Cornish & Clarke, 1986). Decision-making is most likely to be based on information that is most evident and immediate, while neglecting more remote costs or benefits of crime or its avoidance (Felson & Clarke, 1998). From this perspective it would be possible to examine the cognitive processes involved in individual decisions to engage in deviant behaviour, how such processes may differ between those more or less likely to engage in misconduct in particular settings, their perceptions of the environment, and how situational factors influence decision-making.

### ***5.1.2. Routine Activity Perspective***

The routine activities perspective is similar to rational choice theory in that it emphasises the situational determinants of decisions to engage in criminal behaviour. From this perspective, it is argued that for a criminal offence to take place, there must be a convergence in time and place of three minimal elements: 1) a likely offender; 2) a suitable target; and 3) the absence of a capable guardian against crime (Felson & Clarke, 1998). Routine activities theory views criminal behaviour as non-pathological, where all individuals are capable of committing an offence given a salient reason/motivator to engage in criminal behaviour (Clarke & Felson, 1993). However, the theory is not concerned with the origins of criminal motivation (Clarke, 1995).

A suitable target is any person or object that may potentially be taken or attacked by an offender (Clarke & Felson, 1993). A target's position in time and space influences the risk of criminal attack, with four major elements determining the risk of criminal attack: value, inertia, visibility and access (Felson & Clarke, 1998). These four elements are determined from the offender's subjective viewpoint. Targets are more likely to be attacked when they are valued highly by the offender, when they are easy to transport (inertia), when they are exposed to offenders (visibility), and when the offender has quick and easy access to the target (Felson & Clarke, 1998). A capable guardian may not necessarily be police or security guards, and are most likely to be neighbourhood residents, friends, family, bystanders, or owners of property targeted. Crime is more likely to take place when

a suitable target is found in the absence of a capable guardian, resulting in a situation where more crime can occur without more offenders if there are more available targets, or if offenders can gain access to targets with no guardians present (Felson & Clarke, 1998).

### ***5.1.3. Crime Pattern Theory***

Crime pattern theory is a core component of environmental criminology, and seeks to understand how individuals and objects involved in crime move about in time and space (Felson & Clarke, 1998; Ratcliffe, 2006). Environmental criminology is concerned with the spatial behaviour of offenders and potential offenders, and the interaction between offender and target within a discrete location over time (Ratcliffe, 2006). Basically, environmental criminology is focused on “the temporal behaviour of people across space”, referred to as the spatio-temporal dimensions of offending (Ratcliffe, 2006, p. 262). Knowledge concerning local crime patterns has the potential to inform us how individuals interact with their physical environment, and how that interaction produces more or less crime opportunities (Felson & Clarke, 1998). Crime pattern theory recognises that criminal opportunities are not distributed uniformly across time and space, as specific types of offences are likely to be clustered together, with clustering being driven in part by variations in opportunity and guardianship patterns (Ratcliffe, 2006).

Crime pattern theory has the three components of nodes, paths, and edges. Nodes refer to those points from which individuals travel to and from, and hence are concerned with the movements of offenders. Nodes form the anchor points in the daily routines of offenders’ lives, including school, work, and home, with some nodes having particularly strong temporal characteristics (e.g., school and work). Offenders search for criminal targets within and around personal activity nodes, as well as the pathways among them. Edges refer to the boundaries of where individuals live, work, go to school, or seek entertainment. Some criminal offences are more likely to occur at edges. There is also the distinction between insiders and outsiders, where insiders are more likely to commit crimes closer to their neighbourhoods, and outsiders are more likely to commit crimes at edges and retreat back into their areas (Felson & Clarke, 1998). Through attending to the geographical distribution of crime and the routine activities of individuals, researchers are better able to understand the spatio-temporal aspects of criminal opportunities and behaviour. Major shifts in crime rates can be produced through the design and management of towns, cities and businesses (Felson & Clarke, 1998).

#### ***5.1.4. Criticisms of Situational Crime Prevention***

While one of the primary strengths of SCP is that it is a straight-forward and problem orientated approach to the prevention of offending behaviour, the approach can be criticised on three grounds. Firstly, SCP can be criticised because the approach is limited to preventing offending in locations that have been identified as trouble-spots. Because the approach is problem orientated, it does not enable the prevention of crime that occurs sporadically and in many different locations. Secondly, SCP can be criticised on ethical grounds. Because the implementation of some SCP techniques requires significant financial outlays, it may be argued that the approach results in a two-tiered system whereby wealthier members of society can afford to protect themselves and their property while poorer members of society remain open to becoming victims of crime.

Proponents of SCP may respond to these first two criticisms in a number of ways. In response to the first criticism, it is acknowledged that SCP is problem-orientated and that it is limited to preventing offending in identified trouble-spots. After all, these locations should be where prevention efforts are focused because they are likely to have the greatest effect in these locations. In response to the criticisms that SCP may result in a two-tiered system, advocates of SCP would acknowledge that many of the more expensive SCP techniques (such as CCTV) are used in public places for the protection of all members of society. Additionally, many SCP techniques are not expensive (such as neighbourhood watch) and can be implemented by any member of society with no or minimal financial outlays.

The third criticism of SCP is that techniques based on the approach may displace rather than prevent offending behaviour. Displacement assumes that offenders have a disposition to commit offences, have some level of mobility, and have a range of alternative targets at their disposal (Barr & Pease, 1990; Clarke & Felson, 1993). The literature has identified six types of displacement:

- Spatial or geographic displacement – the movement of crime from one location to another location.
- Temporal displacement – the movement of crime from one time to another time.
- Target displacement – offenders target another victim/object.
- Method or tactical displacement – offenders altering method of attacking particular targets.

- Crime type or functional displacement – offenders commit a different offence type to achieve the same outcome.
- Perpetrator displacement – new offenders replace old offenders who have been removed by an initiative

(Source: Reppetto, 1976).

Displacement has become a widely accepted pit-fall of SCP with some describing its occurrence as a “taken for granted truth” (Reppetto, 1976). If displacement is accepted, the ethical criticisms directed at SCP become considerable. Not only are wealthier members of society able to afford to protect themselves from victimisation, but by implementing SCP techniques they engage in a process of relocating offending behaviour to unprotected locations and this may leave poorer members of the community open to greater victimisation.

In defence of SCP, it has been argued that displacement is only ever partial and is limited to some crimes committed by highly motivated offenders rather than crimes committed by opportunistic offenders (Clarke, 1980, 1983, 1992; Reppetto, 1976). Moreover, it has been argued that the benefits of many SCP techniques extend beyond the intended location through a process referred to as diffusion of benefits (Clarke, 1992, 1997; Clarke & Weisburd, 1994).

### ***5.1.5. The Importance of Places and Blocking Criminal Opportunities***

The majority of crime is concentrated within and around a relatively small number of places (Eck, 2006). A place can be defined as “a very small area reserved for a narrow range of functions, often controlled by a single owner, and separated from the surrounding area” (Eck, 2006, p. 241). Places cover a geographically small area, smaller than a neighbourhood or community, and may refer to such places as homes, retail stores, apartment buildings, street corners, train stations, buses and airports (Eck, 2006). Due to the small size of places and the relative ease of control exercised over activities within them, they represent ideal locations in which to implement crime prevention strategies. Through preventing crime in high crime places, we are likely to have a large impact on reducing rates of crime. Place-focused strategies of crime prevention (SCP) are highly varied, and can be implemented by a wider variety of individuals and organisations with little use of law enforcement agencies (Eck, 2006; Weisburd, 1997). The clustering of crime in places suggests that the environment (which may include the built environment, the individuals within it, and the

interactions among individuals and the built environment) is an important element in causing criminal activity.

Blocking criminal opportunities involves making crime more difficult, more risky, less rewarding or less excusable (Clarke, 1995; Eck, 2006). Opportunity blocking can be both performed in places, and built into targets for criminal activity. It is argued that opportunity blocking strategies have a greater direct effect on offenders than crime prevention efforts that focus on addressing individual- and social- level correlates of criminal behaviour (Clarke, 1995; Eck, 2006). Through blocking criminal opportunities many SCP strategies do not rely on formal criminal justice agencies or processes, meaning that place-based prevention has great potential to reduce the economic and social costs associated with crime, and catching and punishing offenders (Eck, 2006). Furthermore, through focusing on places, the costs of crime prevention can be distributed more equitably, where the burden is not solely on government funded programs or agencies (Eck, 2006).

## **5.2. Situational Crime Prevention Techniques**

The crime prevention strategies discussed in this section all involve the blocking of criminal opportunities at places. It must be kept in mind that techniques of SCP may be implemented in a variety of places and be targeted at numerous crimes to achieve a variety of goals. Multiple techniques may also be implemented within a single place. Table 5.2 displays a summary of the effectiveness of situational interventions reviewed by Eck (2006) in terms of what works, what does not work, what is promising and interventions where effects are mixed/unknown. It is evident that there are few situational crime prevention measures that have consistently been effective at reducing crime in the evaluation literature.

Evaluations in the area of SCP have, on average, been of poor methodological quality. This has most likely contributed to the mixed and often contradictory results of independent studies examining the effectiveness of similar SCP interventions. Those SCP interventions that have consistent evidence to support their effectiveness at reducing crime include nuisance abatement remedies to reduce drug-related crimes and street lighting to reduce crimes directed toward individuals. There is a need for further methodologically rigorous empirical evaluations of most



SCP interventions to determine their effectiveness at preventing criminal behaviour, as most interventions fall into the “unknown” category.

**Table 5.2: Summary of Crime Prevention Intervention Findings**

<b>Setting</b>	<b>Works</b>	<b>Does Not Work</b>	<b>Promising</b>	<b>Unknown</b>
Residential	Nuisance abatement			Target hardening Restricting movement Guards CCTV Neighbourhood watch Property marking
Commercial Stores			Multiple clerks Store design	EAS CCTV Target hardening Frequent inventory counts Prohibiting offenders Electronic monitoring Ink tags Guards Cameras Restricting movement
Bank and money handling				Cameras Target hardening Guards
Bars and taverns			Server training	
Transport Public transportation				Removing targets Rapid clean up (graffiti) Design Informal watching CCTV
Parking lots				CCTV Guards Restricting movement
Airports			Metal detectors Guards	
Public setting Open spaces	Lighting		Street closures	CCTV Prohibiting offenders Controlling drinking
Public facilities			Target hardening	Removing targets Signs

Adapted from: (Eck, 2006, p. 280)

Given the importance of place, the review will be structured by classifying SCP techniques according to the places they are implemented, focusing on four categories:

- (i) apartments and residential places,
- (ii) money spending places,
- (iii) transportation places, and
- (iv) other public places.

Eck (2006) has pointed out that our knowledge of the effectiveness of SCP techniques is limited to relatively few place types. Furthermore, empirical evaluations of SCP strategies, on average, tend to have poor methodological rigour.

### ***5.2.1. Apartments and Residences***

Apartments and residences are places where significant levels of violent, property, vehicle and drug-related crimes may be committed (Poyner & Webb, 1991; Tilley & Webb, 1994). Higher levels of crime are generally found in those areas with greater building densities and urban activities, as well as areas that contain higher concentrations of shopping, drinking, and entertainment facilities (Poyner & Webb, 1991). Situational interventions in residential places have generally focused on preventing burglary (Bennett, 2006; Poyner & Webb, 1991). Situational interventions that have been implemented in residential areas include

- (i) target hardening,
- (ii) formal/informal surveillance (Neighbourhood Watch, street lighting, closed-circuit television surveillance, and hot-spot policing),
- (iii) property marking,
- (iv) access control, and
- (v) multi-tactic interventions.

#### **(i) Target Hardening**

Target hardening may refer to a range of measures that aim to increase the efforts offenders must expend in committing a crime. Such measures may deny access or limit access to criminal targets through the use of barriers, including fences, gates, locks, electronic alarms, security screens, and security patrols. Target hardening in residential places usually involves the installation of security at points of access (Cozens, Saville, & Hillier, 2005). Tilley and Webb (1994) conducted an evaluation of the Safer Cities Schemes aimed at burglary reduction in the United Kingdom using

experimental and control areas, and pre-, during, and post-measurements of crime. The interventions were based on target hardening as the primary means of crime prevention. For areas where victim-focused target hardening schemes (reducing the risk of re-victimisation) were implemented, while the total number of burglaries rose, the proportion of re-victimisations fell from 23% to 14% over a period of two years. Furthermore, the time period between burglary re-victimisation increased from an average of 81 days to 137 days, which indicated that the scheme was successful in reducing victims short-term vulnerability to re-burglary (Tilley & Webb, 1994). There was a re-burglary rate of 1.75% for properties covered by the scheme, compared to a re-burglary rate of 5.5% for those not covered by the scheme. Reductions in burglary resulting from target hardening measures were found to be highly variable across the sites where the schemes were implemented from no reductions in burglary rates up to 90 percent reductions in burglary rates in others (Tilley & Webb, 1994).

A further target hardening intervention was implemented in the British district of Rochdale, and the Kirkholt estate within it (Forrester, Chatterton, Pease, & Brown, 1988). The Kirkholt burglary prevention program began in 1987 and operated as a demonstration project up to 1990. The Kirkholt estate had a high rate of recorded domestic burglary prior to the implementation of the program. Extensive interviews with burglars and residents were conducted to obtain information concerning the characteristics of offences and the factors that may be related to the high rates of burglary in the area. The target hardening initiatives included improving household security (target hardening), increasing community (community investment) support, removal of repayment fuel meters, and neighbourhood watch (informal surveillance).

Data was collected from police reports, security surveys, victim questionnaires, and neighbour questionnaires for the years 1986 and 1987. In raw crime rates, burglary in Kirkholt fell from 316 in 1986 to 147 in 1987, and repeat victimisations fell to zero, indicating that there was a large absolute and proportionate reduction in domestic burglary during the intervention (Forrester et al., 1988). During the first phase of the project (1986 to 1987), burglary in the area fell to 40% of its pre-implementation level within five months after the program began. Furthermore, there appeared to be no displacement effects of the program, since areas surrounding Kirkholt displayed no changes or slight reductions in burglary rates. During the second phase of the program, the number of burglaries each year fell by 38% in the first year, 67% in the second year, and 72% by the end of the third year. However, burglary rates also declined in surrounding areas at the end of the second and

third years. The evaluation revealed that the implementation of the program resulted in significant reductions in burglary over three years and that this was a cost-effective program, with a desirable benefit-cost ratio of 5.04 (Welsh & Farrington, 2001).

#### (ii) Formal/Informal Surveillance

The physical design of an environment also has the potential to increase informal or natural surveillance to allow residents to act as active agents in the monitoring of activities within a place (Cozens et al., 2005). Surveillance may also be increased through formal and mechanical strategies, such as street lighting, closed-circuit television surveillance, and hot-spot policing. Through increasing surveillance in an area, opportunities to engage in criminal activities may be decreased, since active monitoring of an area can increase the risk of intervention, apprehension, and prosecution.

Few evaluations of the effectiveness of increased informal/natural surveillance at reducing crime have been conducted, since efforts to increase surveillance have been combined with other SCP techniques. Neighbourhood watch programs (reviewed in the community chapter) are interventions that seek to increase natural surveillance. Available evidence indicates that such programs are ineffective in reducing crime in places. Further research is needed to evaluate the effectiveness of situational measures aimed at increasing natural surveillance on reducing crime.

Street-lighting is a physical design aspect of environments that may be modified to increase the natural surveillance in a given area, as well as increase potential offender's perceptions about the risks of engaging in crime which in turn reduce levels of crime (Farrington & Welsh, 2002, 2004; Painter & Farrington, 1997, 1999, 2001). High visibility coupled with natural surveillance is argued to be a potent means of deterring criminal behaviour and reducing opportunities for crime. The effects of improved street lighting are likely to vary under different conditions, such as existing levels of lighting, different forms of crime, the characteristics of areas or residents, and the interaction between improved lighting and other environmental improvements (Farrington & Welsh, 2002).

Farrington and Welsh (2002) conducted a systematic review of the effects of improved street lighting on crime from studies with: a focus on improved street lighting as the intervention, outcome measures of crime (property and violent crimes), high methodological quality of the

evaluation design (pre- and post-measures, control areas), at least one experimental and control area, and the total number of crimes in each area before intervention was at least 20. A total of 13 (eight American, 5 British) evaluation studies of improved lighting programs were identified that met the criteria for the review. Table 5.3 displays the street lighting evaluation results for the American studies while Table 5.4 displays the results for the British studies.

Four of the eight reviewed American studies displayed reductions in crime from improved lighting, with the other four finding that it was ineffective. All studies employed control areas, which were often similar to and adjacent to experimental areas. Diffusion of benefits may have been an issue given the close proximity of the control areas to the experimental areas. For example, decreases in robbery and burglaries after the introduction of improved lighting was found in the Atlanta experimental area, although increases in those crimes were found in the control area. All outcome measures were obtained from police records.

Atlanta displayed an overall decrease in daytime crime of 16% as a result of improved lighting, compared to an overall increase in crime of 33% for the control area. Night-time was found to increase considerably in both experimental and control areas in Atlanta. For Milwaukee, total crimes decreased by 6% in the experimental area, and increased by 29% in the control area after the introduction of improved lighting. In Kansas City, reductions in violent crimes (52% in experimental area and 7% in control area) were evident from improved lighting, although property crimes decreased more in the control area (32%) than the experimental area (22%). In Indianapolis, results indicated that improved lighting was not effective. Portland displayed little evidence of reduced night-time crime from improved lighting. In Harrisburg night-time crime increased similarly in the experimental and control areas, while in New Orleans crime decreased similarly in both areas.

**Table 5.3: Characteristics and Results of American Lighting Evaluations**

Author, Publication Date, Location	Context of Intervention	Type of Intervention (Other Interventions)	Sample Size	Outcome Measure and Data Source	All Crimes (E Before, C Before)	Types of Crimes	Research Design	Conclusion
Atlanta Regional Commission (1974), Atlanta, Georgia	City centre (high robbery)	Improved (4x) street lighting (none)	E = selected streets in census tract 27, C = rest of streets in census tract 27	Crime (robbery, assault and burglary); police records	T: E+ 32.5%, C+ 84.2% N: E+ 88.7%, C+ 121.5% D: E- 16.4%, C+ 33.3% (114, 234)	Rob: E- 8.1% C+ 23.6% Aslt: E+ 418.2%, C+ 319.6% Burg: E- 9.8%, C+ 32.8%	Before-after, experimental control; before and after periods = 12 months	Effective
Department of Inter-governmental Fiscal Liaison (1973, 1974), Milwaukee, Wisconsin	Residential and commercial area (older residents)	Improved (7x) street lighting (none)	E = 1 area (3.5 miles of streets), C = 1 adjacent area	Crime (property and person categories); police records	T (7m): E- 5.6%, C+ 29.2% N (12m): E- 5.9%, C- 1.7% D(7M): E+ 2.2%, C+ 37.0%	Prop (N): E- 5.8%, C- 3.3% Viol (N): E- 6.3%, C+ 2.0%	Before-after, experimental control; before and after periods = 12 months	Effective
Inskeep and Goff (1974), Portland, Oregon	Residential neighbourhood (high crime)	Improved (2x) street lighting (none)	2 E areas, 2 A areas, C = surrounding areas	Crime (robbery, assault and burglary); police records	N: E- 6.5%, A- 11.8%, C- 12.0% (340,1011; a before = 365)	Rob (N): E- 31.5%, A- 36.6%, C- 30.3% Aslt (N): E- 11.3%, A- 22.1%, C- 7.3%	Before-after, experimental control; before and after periods = 6 or 11 months	Not effective
Wright et al. (1974), Kansas City, Missouri	Residential and commercial areas (high crime)	Improved street lighting (none)	E = 129 relit blocks in 4 relit areas, C = 600 nonrelit blocks in same areas	Crime (violent and property offences); police records	N: E- 36.7%, C- 21.2% (188, 386)	Rob (N): E- 52.2%, C- 16.9% Aslt (N): E- 40.5%, C+ 3.8% Larc (N): E- 39.2%, C- 28.9% MVT (N): E+ 3.0%, C- 34.1%	Before-after experimental control; before and after periods = 12 months	Effective for violence

Harrisberg Police Department (1976). Harrisberg, Pennsylvania	Residential neighbourhood	Improved street lighting (none)	E = 1 high crime area, C = 1 adjacent area	Crime (violent and property offences); police records	N: E+ 14.4%, C+ 17.1% (201,117)	Rob (N): E- 8.7%, C+ 7.1% Aslt (N): E+ 9.4%, C- 24.2% Burg (N): E+ 32.9%, C+ 46.0% MVT (N): E+ 2.4, C+ 20.0%	Before-after experimental control; before and after periods = 12 months	Not effective
Sternhell (1977), New Orleans, Louisiana	Residential and commercial areas	Improved street lighting (none)	E = 2 high crime areas, C = 2 adjacent areas	Crime (burglary, vehicle theft, assault); police records	N: E- 21.5%, C+ 26.4% (1519, 1163)	Aslt (N): E- 18.8%, C- 30.1% Burg (N): E- 25.8%, C- 28.8% MVT (N): E- 29.0%, C- 22.6%	Before-after experimental control; before period = 51 months; after period = 29 months	Not effective
Lewis and Sullivan (1979), Fort Worth, Texas	Residential neighbourhood	Improved (3x) street lighting (none)	E = 1 high crime area, C = 1 adjacent area	Crime (total); police records	E- 21.5%, C+ 8.8% (261, 80)	Not available	Before-after experimental control; before and after periods = 12 months	effective
Quinet and Nunn (1998), Indianapolis, Indiana	Residential neighbourhood	Improved street lighting (police initiatives)	E = 2 multiblock areas, C = 2 areas with no new lights	Calls for service (violent and property crime); police records	E+ 39.0%, C+ 4.1% (excluding police actions) (118, 49)	Viol: E+ 39.2%, C+ 81.6% Prop: E- 13.8%, C- 18.2% (including police actions)	Before-after experimental control; before and after periods = 6-9 months	Not effective

Notes: E = experimental, A = adjacent, C = control, T = total, N = night, D = day, Rob = robbery, Aslt = assault, Burg = burglary, Prop = property, Viol = violence, Larc = larceny, MVT = motor vehicle theft; E Before = number of crimes in experimental area before; C Before = number of crimes in control area before; 4x = 4 times increase in lighting, and so forth. "+" = increase, "-" = decrease.

Adapted from: (Farrington & Welsh, 2002, pp. 323, 325).

**Table 5.4: Characteristics and Results of British Street Lighting Evaluations**

<b>Author, Publication Date, Location</b>	<b>Context of Intervention</b>	<b>Type of Intervention (Other Interventions)</b>	<b>Sample Size</b>	<b>Outcome Measure and Data Source</b>	<b>All Crimes (E Before, C Before)</b>	<b>Types of Crimes</b>	<b>Research Design</b>	<b>Conclusion</b>
Poyner (1991), Dover	Parking garage (in town centre)	Improved lighting (at main entrance/exit); (fencing, office constructed)	E = 1 parking garage, C = 2 open parking lots close to E	Crime (total and theft of and from vehicles); police records	E- 49.0%, C- 41.9% (96, 43)	TFV: E- 21.4%, C- 50.0% TOV: E- 81.6%, C- 47.1%	Before-after, experimental control; before and after periods = 24 months	Effective (theft of vehicles)
Shaftoe (1994), Bristol	Residential neighbourhood	Improved (2x) street lighting (none)	E = 2 police beats, C = 2 adjacent police beats	Crime (total); police records	T: E- 5.3%, C+ 27.8% N: E- 5.8%, C+ 19.3% D: E- 4.9%, C+ 33.3% (2931, 1315)	Rob (N): E+ 50.8%, C- 27.8% TFV (N): E- 29.6%, C+ 10.8%	Before-after, experimental control; before and after periods = 12 months	Effective
Poyner and Webb (1997), Birmingham	City centre market	Improved lighting (none)	E = 1 market, C = 2 markets	Thefts; police records	(136, 81)	Theft (D): E- 78.7%, C- 18.5%	Before-after, experimental control; before and after periods = 12 months (6 months in each of 2 years)	Effective



Painter and Farrington (1997, 2001), Dudley	Local authority housing estate	Improved (2x) street lighting (none)	E = 1 housing estate, C = 1 adjacent estate	Crime (total and types of offences); victim survey and self-reports	VS: E- 40.8%, C-15.0% SR: E- 35.0%, C- 14.0% N: E- 31.9%, C- 2.0% D: E- 38.7%, C- 26.0% (VS: 495, 368) (SR: 480, 499)	VS Burg: E- 37.7%, C- 13.4% Veh: E- 49.1%, C- 15.7% Viol: E- 40.8%, C+ 4.9% SR Viol: E- 39.6%, C- 25.6% Vand: E- 18.2%, C+ 10.9% Dish: E- 7.1%, C+ 60.0%	Before-after, experimental control and statistical analyses; before and after periods = 12 months	Effective
Painter and Farrington (1999) Stoke-on-Trent	Local authority housing estate	Improved (5x) street lighting (none)	E = 2 housing estates, A = 2 adjacent estates, C = 2 nonadjacent estates	Crime (total and types of offences); victim survey	VS: E- 42.9%, A- 45.4%, C- 2.0% (551, 61: A before = 243)	VS Burg: E- 15.1%, A- 20.3%, C+ 0.6% Veh: E- 46.4%, A- 47.7%, C- 34.7% Viol: E- 68.0%, A- 66.3%, C- 39.2%	Before-after, experimental control and statistical analyses; before and after periods = 12 months	Effective

Notes: E = experimental, A = adjacent, C = control, T = total, N = night, D = day, SR = self-reports, VS = victim survey Rob = robbery, Burg = burglary, TFV = theft from vehicle, TOV = theft of vehicle, Veh = vehicle crime, Vand = vandalism, Dish = dishonesty, Viol = violence; E Before = number of crimes in experimental area before; C Before = number of crimes in control area before; 2x = 2 times increase in lighting, and so forth. "+" = increase, "-" = decrease.  
Adapted from: (Farrington & Welsh, 2002, pp. 330, 331).

Odds ratios were calculated for the studies, which were an indication of the effect size of the studies, and were calculated by dividing the change in crimes in the control area by the change in crimes in the experimental area. The odds ratio was a measure in the proportional change in crime in the control area compared to the experimental area, with an odds ratio greater than 1.0 indicating a desirable effect. Significant effect sizes for the total reduction in crime from improved street lighting were found for the Atlanta (1.39, crime increased by 39% in the control area compared to the experimental area), Milwaukee (1.37, 37% increase in control area), and Fort Worth (1.38, 38% increase in control area) studies. For all studies, the average effect size was an odds ratio of 1.08 for all crimes, which just failed to reach statistical significance.

For the British studies, three studies were based on police records while two were based on victim surveys. Improved lighting was found to be effective in all five studies at reducing crime. The average effect size was an odds ratio of 1.42 for the British studies, which was statistically significant. The studies in Bristol (1.35), Birmingham (3.82), Dudley (1.44), and Stoke-on-Trent (1.72) all had statistically significant effect sizes. The combination of both the American and British data resulted in an overall average total effect size of 1.25, which was statistically significant. Overall, the effects of improved lighting were found to be highly variable across studies, which may be due to a wide variety of factors. The British studies which were the most recent indicated that street lighting can be effective in reducing crime. The studies evaluated in the review were dated (particularly the American studies), and there is a need to conduct more recent evaluations of the effects of improved lighting in reducing crime. Specifically, research is needed to determine the mechanisms through which improved street lighting reduces crime, and the optimum conditions under which lighting can produce the most positive effects.

Formal or mechanical surveillance is usually provided by local stakeholders or government agencies, including shop keepers, security guards and police. The use of CCTV technology is one means of increasing formal surveillance to deter potential offenders, and will be discussed in greater detail in relation to SCP techniques in money spending and other public places. Welsh and Farrington (2002) conducted a systematic review of 22 CCTV evaluations examining the effectiveness of such programs in reducing crime. The evaluations were organised according to the setting in which the intervention took place: (i) city centre or public housing, (ii) public transport, and (iii) car parks (Welsh & Farrington, 2002). Of the 13 evaluations identified that were classified as taking place in city centre or public housing settings, two were specifically related to public

housing, and 11 related to city centre settings. Of the 13 evaluations, seven were conducted in England, five in the United States, and one in Scotland. The average follow-up duration was 10.9 months, ranging from 3 months to 24 months. The evaluations revealed mixed results about the ability of CCTV to reduce crime, with five having desirable effects, three having undesirable effects, and five having null or uncertain effects. Table 5.5 displays the results of the CCTV evaluations carried out in city centre or public housing settings.

Hot Spot Policing is a crime prevention strategy that attempts to reduce criminal behaviour through increasing formal surveillance in high-crime places (Braga, 2005). It is well known that crime tends to cluster in particular areas, and it is argued that many crime problems may be more efficiently reduced if police focused their attention and activities on these deviant places (Braga, 2005). An expanding body of research suggests that focused police interventions are highly effective in producing crime prevention gains within high-crime areas (Braga, 2005).

Braga (2005) conducted a systematic review of randomised control group experiments examining the effects of hot spot policing on crime. Hot spot policing interventions were defined as focused police enforcement efforts to reduce criminal activity. Five randomised controlled trial experiments were identified that were conducted in three large cities in the United States between 1989 and 1999. The interventions used in the experiments were classified into three broad categories: enforcement problem-oriented policing interventions, directed and aggressive patrol programs, and police crackdowns and raids. Four of the five interventions reviewed reported significant reductions in crime which was measured by calls for service. A meta-analysis indicated that the average effect size for all interventions, excluding the intervention that displayed no effect, was large ( $d = 0.632$ ) and statistically significant when hot spots policing intervention treatment places were compared to control places (Braga, 2005). This suggested that overall, hot spots policing was effective in reducing citizen calls for service in treatment hot spots when compared to control hot spots.

**Table 5.5: Evaluation Results of CCTV Interventions in City Centre and Public Housing Settings**

<b>Author, Publication Date, and Location</b>	<b>Context of Intervention</b>	<b>Type and Duration of Intervention</b>	<b>Sample Size</b>	<b>Other Interventions</b>	<b>Outcome Measure of Interest and Data Source</b>	<b>Research Design and Before-After Time Period</b>	<b>Results</b>
Musheno, Levine, and Palumbo (1978), Bronxdale Houses, New York City, USA	Public housing	CCTV monitoring system (cameras in lobby and elevators; monitors in apartments); 3 months	E = 3 buildings, C = 3 buildings Note: project had 26 high-rises; 53 apartments in each	None	Crime (multiple offences); victim survey	Before-after experimental control Before = 3 months; after = 3 months	E vs C: total crimes -9.4% (26 to 21) (uncertain effect)
Brown (1995), Newcastle-upon-Tyne	City or town centre	CCTV; 15 months	E = 4 beats of central area, C = 7 remaining beats of city centre Note: There are 2 other C, but each is less comparable to E	None Note: 14 of 16 cameras are in E; remaining 2 are in C	Crime (multiple offences); police records	Before-after experimental control Before = 26 months; after = 15 months	E vs C (monthly average): total crimes: -21.6% (343 to 269) vs -29.7% (676 to 475); burglary: -57.5% (40 to 17, p<.05) vs -38.7% (75 to 46, p<.05); theft of vehicles: 47.1% (17 to 9, p<.05) vs -40.5% (168 to 100, p<.05); theft from vehicles: -50.0% (18 to 9, p<.05) vs -38.9% (106 to 65, p<.05) (undesirable effect)
Brown (1995), Birmingham	City or town centre	CCTV; 12 months	E = area 1 (streets with good coverage), C1 = area 2 (streets with partial coverage), C2 = area 4 (other streets in zone A of Div. F), C3 = area 5 (streets in Zones B-G of Div. F)	None	Crime (total and most serious offences); victim survey	Before-after experimental control Before = 12 months; after = 12 months	E vs C1: total crimes: -43.3% (163 to 156) vs +131.6% (19 to 44) E vs C2: total crimes: -4.3% vs +130.8% (26 to 60) E vs C3: total crimes: -4.3% vs +45.5% (33 to 48) (desirable effect)
Sarno (1995, 1996), London Borough of Sutton	Town centre	CCTV; 12 months	E = part of Sutton town centre, C1 = rest of Sutton town centre, C2 = all of borough of Sutton	None	Crime (total and selected offences); police records	Before-after experimental control Before = 12 months; after = 12 months	E vs C1: total crimes (not including vehicle crime): -12.8% (1,655 to 1,443) vs -18% (data n.a.) E vs C2: total crimes: -12.8% vs -30% (data n.a.) (undesired effect)
Short and Ditton (1995, 1996) and Ditton and Short (1998, 1999), Airdrie	Town centre	CCTV; 24 months	E = 6 police beats, C1 = rest of 6 police beats (not in camera vision), C2 = rest of police sub-division, C3 = rest of police division	None	Crime (total and multiple categories); police records	Before-after experimental control Before = 24 months; after = 24 months	E vs C3: total crime: -35% (data n.a.) vs -12% (data n.a.) (desirable effect) Note: data not provided to allow for comparisons of E with C1 or C2

Skinns (1998a, b), Doncaster	Town centre	CCTV; 12 months	E = all or parts of streets in vision of cameras in commercial areas, C = commercial areas of 4 adjacent townships	'Help points' for public to contact CCTV control rooms	Crime (total and selected offences); police records	Before-after experimental control Before = 24 months; after = 24 months Note: there were 2 Es and 6 Cs used. The C used here is because the author says it was the most comparable to E. Note: This E has been used because it includes the other E.	E vs C: total police-recorded crimes: -21.3% (5,832 to 4,591) vs +11.9% (1,789 to 2,002) (desirable effect)
Squires (1998a), Ilford	Town centre	CCTV; 7 months	E = town centre, C = areas adjacent to town centre	None	Crime (total violent, and selected offences); police records	Before-after experimental control Before = 6 months; after = 7 months Note: 2 other Cs used, but less likely to be comparable to E	E vs C: total crimes: -17% (data n.a.) vs +9% (data n.a.) (desirable effect)
Armitage, Smyth, and Pease (1999), Burnley	Town centre	CCTV; 20 months	E = police beats with CCTV, C1 = beats having a common boundary with CCTV beats, C2 = other beats in police division	None	Crime (total and multiple offences); police records	Before-after experimental control Before = 12 months; after = 12 months <sup>a</sup>	E vs C1: total crimes: -28% (1,805 to 1,410) vs =1% (6,242 to 6,180); violence: -35% (117 to 87) vs -20% (267 to 223); vehicle crimes: -48% (375 to 253) vs -8% (1,842 to 1,706); burglary: -41% (143 to 101) vs +9% (2,208 to 2,426) E vs C2: total crimes: -28% vs +9% (1,069 to 1,175); violence: -35% vs 0% (32 to 32); vehicle crimes: -48% vs -8% (309 to 285); burglary: -41% vs +34% (366 to 555) (desirable effect)
Mazerolle, Hurley, and Chamlin (2000), Cincinnati (Northside), USA	City centre	CCTV; 3 months	E = 1 site with CCTV, C = 1,000 foot radius BZ	None	Calls for service (weekly average); police records	Before-after experimental control Before = 23 months; after = 6 months Note: 2 other Cs of 200 and 500 foot radii were used and were included in the 1,000 foot radius C	E vs C (weekly average): +1.8% (901 to 917) vs 0% (36 to 36) (null effect)
Mazerolle, Hurley, and Chamlin (2000), Cincinnati (Hopkins Park), USA	City centre/park	CCTV; 3 months	E = 1 site with CCTV, C = 1,000 foot radius BZ	None	Calls for service (weekly average); police records	Before-after experimental control Before = 23 months; after = 4 months Note: 2 other Cs of 200 and 500 foot radii were used and were included in the 1,000 foot radius C	E vs C (weekly average): +9.8% (1,062 to 1,166) vs 0% (22 to 22) (null effect)
Mazerolle, Hurley, and Chamlin (2000), Cincinnati (Findlay Market), USA	City centre	CCTV; 2 months	E = 1 site with CCTV, C = 1,000 foot radius BZ	None	Calls for service (weekly average); police records	Before-after experimental control Before = 24.5 months; after = 3.5 months Note: 2 other Cs of 200 and 500 foot radii were used and were included in the 1,000 foot radius C	E vs C (weekly average): +16.9% (1,005 to 1,175) vs +17.1% (111 to 130) (null effect)

Williamson and McLafferty (2000), Brooklyn, New York, USA	Public housing	CCTV; 18 months	None	E = 9 buildings (1,220 appartmentsl Albany project), C = no. of buildings n.a. (Roosevelt project)	Crime (total and multiple categories) inside housing projects and inside zones of 0.1 to 0.5 miles radii around projects; police records	Before-after experimental control with matching Before = 18 months; after = 18 months	E vs C: change in total crimes inside projects: 0% vs -5.3%; change in total crimes inside 0.1 mile BZ: 0% vs -4.0%; change in major felonies inside projects: -22.8% vs -14.5%; change in major felonies inside 0.1 mile BZ: -6.4% vs -8.6% (data n.a.) (null effect)
Farrington, Bennett, and Welsh (2002), Cambridge	City centre	CCTV; 11 months	None	E = city centre, C = secondary centre	Crime (total and multiple categories); police records. Also victim survey data on crime and disorder	Before-after experimental control Before = 11 months; after = 11 months	E vs C: total crimes: -13.8% (2,600 to 2,242) vs -26.9% (1,324 to 968); violent crimes: -6.0% (151 to 142) vs -33.8% (77 to 51); vehicle crimes: -53.1% (224 to 105) vs -54.0% (250 to 115); percentage victimised: +8.0% (26.4% to 28.5%) vs +19.3% (11.4% to 13.6%) (undesirable effect)

a There was an additional eight months of follow-up, but the authors reported crime data as percentage changes relative to the 12-month before period, so it was not possible accurately to calculate the number of incidents for the additional eight months.

Notes: Locations were in the UK unless otherwise specified; BZ = buffer zone (area surrounding experimental area); E = experimental area; C = control area; n.a. = not available.

Adapted from (Welsh & Farrington, 2002, pp. 15-21).

### (iii) Property Identification

Property identification involves making crime targets less attractive to potential offenders. For example, valuable household items may be engraved so that they may be more easily identifiable if burglars attempt to sell the items illegitimately. In an evaluation of a property marking program in three isolated communities in the United Kingdom, a 62% reduction in burglary was reported by residents who participated in the program when compared to those residents who did not participate in the project (Laycock, 1991). Although not empirically validated, evidence suggested that the publicity of the property marking scheme may have been a major factor in the effectiveness of the program at reducing burglary (Laycock, 1991). However, the results must be interpreted with caution since participation in the program was voluntary (participants self-selected into the experimental group), which may have resulted in a situation where the most vulnerable residents did not participate in the program. Further research needs to be conducted to determine the effectiveness of property identification interventions in reducing crime in more urban areas.

### (iv) Access Control

A further technique for reducing the opportunities for crime is through restricting access to potential targets and producing a heightened perception about the risk of apprehension (Cozens et al., 2005). Access may be controlled through informal/natural surveillance (e.g., spatial definition), formal/organised/mechanical surveillance, and mechanical (e.g., locks, security screens) strategies (Cozens et al., 2005). Design features of environments have been found to impact on crime levels, such as design features that control pedestrian movement through residential complexes (Bowers, Johnson, & Hirschfield, 2004; Cozens et al., 2005). Available evidence suggests that areas with unregulated access and movement have higher rates of crime than places that restrict access (Cozens et al., 2005; Eck, 2006). Furthermore, evidence suggests that design features that reduce and restrict pedestrian movement and access in residential areas are effective in reducing rates of crime (Eck, 2006).

One method of restricting access is alley-gating, which involves the installation of lockable gates across alleyways running along the back of terraced properties to restrict access to residential areas to local residents in an effort to remove opportunities for crimes such as burglary. Bowers et al (2004) conducted an evaluation exploring the effectiveness of alley-gating techniques at reducing burglary. A quasi-experimental pre- and post-measure design was used, using police-recorded burglary data covering the historic period before implementation (1 January 1998 to 31 December 1999) and the

period of implementation (1 January 2000 to 31 December 2003). A total of 3,178 gates were installed during the evaluation period, with the gates installed protecting 106 distinct residential blocks of adjacent housing, containing approximately 362 residential properties (SD = 417, range 6 to 3,190). All alley-gates were installed in the City of Liverpool in Merseyside County, north-west England. Data was analysed using a Geographical Information System (GIS). Results indicated that burglary in the experimental areas had fallen by up to 37% when compared to comparison areas 12 months after installation of the gates. Results further indicated that there was a diffusion of benefits of the intervention, where burglary was less likely in areas surrounding alley-gated residences. These results suggest that controlling access may be an effective means of reducing crime.

Overhead walkway systems were a common feature of British medium-rise high-density public housing estates built in the 1960s and 1970, and have been blamed for increasing crime and resident's and visitor's fears of being victimised due to the easy access such walkways provide to offenders for potential crime targets (Poyner, 1997). Other poor design features of housing estates include a large number of residences per entrance and features that allow unrestricted pedestrian access. Poyner (1997) conducted an evaluation of the effects of walkway removal (access control) on crime in the British housing estate of Lisson Green between the beginning of 1982 to the end of 1984, with walkways removed in October 1982. Information was derived from police-recorded crime data from 1981-1985, making a follow-up period of three years for officially recorded crime patterns. Information was gathered on several crimes including burglary, mugging (robbery and theft from person), serious crimes (e.g., assaults, drug-related crime), vehicle crimes, and other crimes (e.g., damage to property).

In terms of overall crime levels, crime rates across the five years were relatively stable (crimes per 100 households: 1981 = 14.4; 1982 = 15.1; 1983 = 12.8; 1984 = 14.4; and 1985 = 16.6). There was a slight reduction in overall crimes rates in 1983 when compared to the other years, but no major reduction in 1982 when the walkways were removed. Crime rates were looked at in more detail to examine whether walkway demolition resulted in crime reductions for specific forms of crime. One of the implicit goals of the removal of walkways was that residential burglary would be decreased through denying access to potential offenders. Results suggested that removal of walkways had no effect on burglary (break-ins



to apartments). For robberies and snatches, reported offences fell immediately after removal of the walkways (total incidents: 1981 = 33; 1982 = 17; 1983 = 7; 1984 = 7; and 1985 = 11). It must be acknowledged that these changes in reported offences are small, and may not necessarily be statistically significant. However, this reduction cannot solely be attributed to walkway removal, as entry phones were installed just before the walkways were demolished. Evidence indicated that the majority of robberies and snatches occurred in corridors which lacked surveillance. Overall, the effects of walkway removal were quite limited and specific, where robberies and snatches were most likely to be affected. The evaluation indicated that controlling access to residential areas can be effective in reducing certain criminal activities.

#### (v) Multi-Tactic Interventions

Hirschfield (2004) conducted an evaluation of 21 location-specific Home Office Strategic Development Projects (SDP) aimed at reducing burglary in northern England. A range of crime prevention techniques were implemented in an effort to reduce opportunities for burglary, where 179 interventions were identified across the 21 projects with a mean of eight per SDP. The most frequently utilised interventions included the use of publicity, target hardening of individual properties, and the collection of information on offender disruption strategies. Interventions were tailored to the crime problems in the area, and the areas chosen for participation were not scientifically selected but were more representative of localities with high rates of crime.

The evaluation of the projects sought to identify changes in police recorded burglary rates in the SDP areas and the areas surrounding them. The 21 northern SDPs produced a 24% reduction in burglary in the two years following April 1999, compared to a 14% reduction in England and Wales as a whole. When compared to the changes in the police force control areas, the net overall reduction in burglaries by the northern SDPs was 12%, which was equivalent to 1,246 burglaries prevented when compared to control areas. However, reductions in burglary varied considerable across SDP implementation sites, with two of the 21 areas failing to achieve any reductions in burglary. Results of the evaluation indicated that 71% (15) of the SDPs had statistically significant reductions in burglary controlling for burglary trends in control areas, with three of these 15 SDPs having net reductions in burglary of over

30 percent. Four of the SDPs failed to produce significant reductions in burglary after controlling for burglary trends in control areas, where two of these areas experienced net increases in burglary. Evidence of displacement of burglary resulting from the SDPs was found in five of the initiative areas, while seven SDPs displayed evidence of potential diffusion of benefits to surrounding areas. Diffusion of benefit effects to surrounding areas was found to be greater than the displacement effects that were evidenced.

Closer examination of the burglary reduction effects revealed that reductions began prior to the implementation of the interventions, suggesting that the publicity of the projects may have acted as a deterrent for burglary (Hirschfield, 2004). Those interventions found to have the greatest effect on reducing burglary included location specific SCP measures (e.g., target hardening), publicity campaigns, and full planning of interventions before they were implemented. Further factors that produced greater reductions in burglary included: high expenditure per household on preventative measures, high degrees of partnership working, above average expenditure on equipment, below average expenditure on personnel, strong and stable management structures, established partnerships in place, strong planning and effective community engagement, higher levels of owner occupation (more affluent areas), low rates of population turnover, fewer flats within housing blocks, and fewer males aged between 16 and 24 years within the population (Hirschfield, 2004).

### ***5.2.2. Money Spending Places***

A wide variety of SCP measures may be implemented to prevent crime in places where money or material goods are sold, handled, and/or stored. The theft of retail goods accounts for a substantial proportion of crimes committed within retail stores and are committed by both patrons and employees (Eck, 2006). Robberies and burglaries of retail or other money handling places are also concerning. The SCP techniques discussed below aimed to prevent offending in three money spending places including:

- (i) convenience store/petrol station robberies,
- (ii) burglary/robbery in commercial/other retail locations, and
- (iii) retail crime.

### (i) Convenience Store/Petrol Station Robberies

Situational measures aimed at preventing crime in these settings generally include environmental design, target hardening through increased security, and increased natural and formal surveillance. Prevention measures that have implemented include: improved cash handling procedures, signs indicating limited cash, enhanced visibility inside and out, elimination of escape routes, use of security devices, encouraging visits from police and taxi drivers, enhancing employee alertness, and keeping stores clean (Hunter & Jeffery, 1997). These prevention strategies are based on the assumption that robberies may be prevented through facilitating physical and behavioural changes in places.

There are few recent empirical evaluations examining how effective situational measures are at preventing robbery in convenience stores or petrol station settings (Eck, 2006; Hunter & Jeffery, 1997). Available evidence does however indicate that convenience store robberies are highly dependent on environmental influences. Hunter and Jeffery (1997) reviewed evidence from evaluations of SCP measures implemented in the United States, including limiting cash handling, enhancing lighting, removing visual obstructions, robbery detection cameras, and training clerks. The adoption of these measures was found to result in a 35% reduction in robberies occurring during 1989 in Jacksonville, Florida. The available evidence concerning the effectiveness of situational measures at preventing burglary in convenience store settings is dated and produced mixed findings.

### (ii) Burglary/Robbery in Commercial/Other Retail Places

Crimes that may occur in retail places may include “street attacks” such as violent and sexual assaults, robbery and thefts from the person, as well as burglaries of commercial establishments (Eck, 2006). Poyner and Webb (1997) studied thefts from the person in the largest retail markets in England (Bull Ring Markets) between the years of 1982 to 1985. It was found that thefts from the person were more likely to occur in densely packed, poorly laid out areas. Interventions were implemented in 1982 to improve the design of the markets, through providing more space for walkways and market stalls. Additionally, intensive policing was used to increase surveillance of the markets. Data was obtained from police records concerning recorded instances of thefts from the person in the study area. The data clearly indicated that there were progressive and significant reductions in thefts from the person from

1983, which was when the changes to the market layout were made. There was a 40% reduction in thefts from the person one year after the strategies had been implemented which increased to over 70% after two years. However, there was evidence of displacement effects resulting from police activity, where thefts were displaced to another section of the market where police surveillance was reduced. The reduction of theft was attributed to a combination of reduced crowding, improved design layout, and improved lighting in the market, although it was not possible to isolate the separate effects each measure had in reducing crime.

Tilley and Hopkins (1998) conducted an evaluation of the Small Business and Crime Initiative (SBCI), which was a three year demonstration project aimed at reducing crime committed against 1,381 small businesses in two areas of Leicester (680 in Belgrave and 701 in West End; United Kingdom). The initiative was based on a problem-solving approach, where crime-related problems were first identified, with crime prevention measures then developed and implemented. Initial data collected in September and October 1995 indicated that businesses in the area were at higher risk of victimisation across a diverse range of offence categories when compared to households (Tilley & Hopkins, 1998). Specifically, 75% of businesses had been the victim of one or more crimes, there was an overall incident rate of 3.5 incidents per business, and an average of 5.3 incidents for those businesses victimised once or more. A small proportion of business accounted for a high proportion of crime, with 5% of businesses experiencing 34% of the most serious incidents, 3% of businesses accounting for 81% of violent incidents, and 17% of businesses accounting for 69% of all burglary incidents (Tilley & Hopkins, 1998). Prevention measures were designed and implemented for those businesses most chronically victimised (49 identified of which 28 receptive to prevention suggestions). Measures adopted were predominately included a range of SCP techniques such as increased security, increased surveillance, and covert detection measures (e.g., silent alarms). Other businesses were given advice on how to reduce the risk of crime victimisation. Data for the evaluation was derived from a victimisation survey and based on recorded crime data.

Findings indicated that there was a large reduction in total crimes (33%, 3,540 to 2,390) following implementation of the program. Specifically, there were reductions in transport loss (42%, 430 to 248),

burglary (41%, 735 to 433), criminal damage (36%, 464 to 295), fraud (17%, 773 to 642); and abuse (19%, 736 to 549) offences. Results at the second wave of data collection indicated that there continued to be a small minority of businesses that were highly victimised. While the highly victimised businesses at time one had experienced a total of 675 incidents, this was reduced to 94 at time two, resulting in an 86% reduction in victimisation. The majority of highly victimised businesses at time one were not heavily victimised at time two, with those heavily victimised businesses at time two not heavily victimised at time one. This suggests that there may have been a displacement effect on crime, since the heavily victimised businesses at time two were nearby to the chronically victimised businesses at time one. There was no greater reduction in crime incidents experienced for those businesses that received significant input from SBCI compared to those receiving little input. It was argued that the reduction in crime was not solely due to the SBCI, where the publicity of the initiative may have produced deterrent effects (Tilley & Hopkins, 1998). The evaluation provided evidence that situational measures can be effective in reducing crime on commercial premises and that the greatest effects may be produced through focusing prevention efforts on those businesses with the highest levels of victimisation and the businesses surrounding them to avoid displacement effects (Tilley & Hopkins, 1998). It was argued that further research is needed to identify the characteristics of businesses at highest risk for victimisation and establish the measures that may be best utilised to confront and modify those characteristics to prevent victimisation (Tilley & Hopkins, 1998).

### (iii) Retail Crime

Retail crimes are widespread and present a major problem to retail establishments and may include shoplifting, employee theft, fraud, robbery, and violence to staff (Geason & Wilson, 1992; Nelson & Perrone, 2000; Shapland, 1995). The true extent of retail theft is unknown due to the absence of accurate data, although it is a major problem for retailers in that it can result in significant financial losses (Nelson & Perrone, 2000; Shapland, 1995). It has been estimated that in terms of costs, retailers experience losses equivalent to 1-2 percent of turnover, which equates to a 20-25 percent loss in profit, which occur mainly as a result of burglaries and theft (Shapland, 1995). Retail stores experience a high incidence of theft due to marketing practices such as displaying goods openly to attract customers and provide easy access to them, although many incidences of theft remain undetected (Geason & Wilson,

1992). Theft from retail stores is not only committed by customers, but by employees as well. Individuals below the age of 20 are the predominant offenders of retail theft, although this may be a function of the fact that they are more likely to be targeted as potential offenders (Nelson & Perrone, 2000).

There are a range of situational measures that may be implemented to reduce the incidence of theft in retail establishments, including electronic surveillance mechanisms, CCTV, access control barriers, entry/exit screening, use of computers, staff training, increased management attention to the problem, changes in the design of the store, use of security consultants and store detectives, identification of frequently stolen items, and improved internal operations and audit procedures (Geason & Wilson, 1992). The most common methods used to prevent consumer retail theft include warning notices, display protection, store detectives, uniformed guards, CCTV and electronic tagging (Farrington, 1999; Farrington et al., 1993). All these measures involve reducing opportunities and increasing the risks and difficulty of engaging in retail theft.

Unfortunately, there are few empirical evaluations of the effectiveness of crime prevention efforts in the retail sector. A major issue with evaluating the effectiveness of crime prevention efforts is the problem of measuring the incidence of retail theft accurately (Farrington, 1999). One means of measuring retail theft is through stock “shrinkage”, which refers to the disappearance of goods that have not been sold (Shapland, 1995). However, it is difficult to determine the extent to which shrinkage results from customer theft, staff theft, falsified deliveries, shop-soiled goods, system errors or in-store use (Farrington et al., 1993). Many stock losses cannot be attributed to a specific cause, hence most losses remain unexplained (Farrington et al., 1993). Data concerning retail theft can be obtained from a number of sources, including retailer surveys, police records, self-report offending surveys, from store detective records, and through systematic counting of merchandise at high risk for theft. The methodological quality of SCP evaluations in retail settings are poor, where studies do not use pre- and post-measures of theft with experimental and control retail establishments. Farrington (1999) reports that only one experiment to date examined shoplifting and used a pre- post-measure experimental-

control design. This has resulted in a situation where little is known concerning the effectiveness of situational measures in preventing crime in retail settings.

Farrington et al (1993) conducted an experiment examining how effective SCP measures were at preventing shoplifting using a problem-solving approach. The experiment was conducted 1991 in nine Dixons and Currys electrical stores (retail chains specialising in electrical goods in the U.K.) Crime analysis was used to identify when and where offences occurred most often, the differential vulnerability of goods, shoplifting opportunities, and who were the offenders (Farrington et al., 1993). Prevention measures were chosen based on the crime analysis information, and included electronic tagging (T, also known as electronic article surveillance [EAS]), store redesign (R) and a uniformed guard (G). Thus, there were three prevention conditions and a control condition (C) where no prevention strategy was introduced. Shoplifting was measured by systematic counting of specified essential items (audiotapes, videotapes, films, headphones and small domestic appliances). The design of the experiment allowed comparisons between each experimental condition with a control condition, as well as the comparison with the T condition with both R and G conditions, pre-test and post-test comparisons of shoplifting were also performed. A longer follow-up was also implemented to examine the long-term effects of the interventions, with the follow-up period ranging from three to eight weeks after the immediate post-test measures depending on the store evaluated.

The results indicated that there were significant reductions in shoplifting at the stores of Bradford (store redesign, reduction in shoplifting from 37% to 15%), Altrincham (electronic tagging, reduction of 31% to 7%), Wolverhampton (electronic tagging, reduction of 17% to 1%), Glasgow (store redesign, reduction of 24% to 5%), and Walworth (control, reduction of 14% to 30%). Electronic tagging produced significant reductions in the shoplifting rate when post-test was compared to pre-test at both stores it was implemented in. Furthermore, follow-up results indicated that the benefits were retained several weeks after it was introduced. Redesigning stores also significantly decreased shoplifting at post-test compared to pre-test in both stores it was implemented in. However, the benefits of store redesign were not retained at follow-up. The presence of security guards was found to have no effect on shoplifting. One control condition was found to have lower shoplifting rates at post-test when

compared to pre-test, although it was most likely due to random fluctuations in offending since the difference was no longer significant at follow-up. Electronic tagging was found to be more effective than the control condition at post-test, but there was no significant difference between tagging and guards at post-test in shoplifting reductions. Furthermore, there was no significant difference between tagging and redesign at post-test in reductions in shoplifting but there were differences at follow-up where tagging produced lower shoplifting rates, suggesting that the effects of store redesign disappear over time. Overall, it was concluded that tagging produced a decrease in shoplifting that was maintained overtime, while store redesign produced short-term reductions in shoplifting that were not maintained over time. Security guards were found to have no effect in reducing shoplifting.

Electronic article surveillance (EAS) systems are extremely popular anti-shoplifting protection systems that are installed in thousands of stores world wide (DiLonardo, 1997). Electronic tags are attached to goods which set off alarms if detected by detectors that are usually placed at store exits. EAS systems act as both psychological and physical deterrents to shoplifting. The effectiveness of EAS systems in reducing shoplifting vary across the sites they are implemented in, although they have been found to be effective in reducing losses to retail stores (DiLonardo, 1997). From a review of six evaluations of the effectiveness of EAS systems in reducing rates of retail theft, Eck (2006) reported that reductions in shrinkage ranged from 32% to 93%.

CCTV has also been found to be effective at reducing rates of shoplifting in retail stores Beck and Willis (1999) examined how effective CCTV was at preventing shoplifting by comparing high-level (three stores, multiple cameras, full-time watching by staff, recording capability, monitors at all public entrances), medium-level (six stores, comparable number of cameras, monitoring by manager as time permitted, recording capability, and monitors at all public entrances), and low-level (six stores, dummy cameras, no recording capability, monitors at all public entrances) CCTV systems. Theft was measured through stock inventory counts at three and five months after implementation. At three months after implementation, the number of items lost per week declined by 40% for high-level stores, 17% for medium-level stores, and 20% of low-level stores. At six months after implementation, items lost per week were reduced by 26% for the high-level store, but increased by 32% and 9% for the medium- and



low-level stores respectively (Beck & Willis, 1999). These results suggested that CCTV can be effective in the short-term for reducing theft, although long-term effectiveness may depend on continued staff monitoring. It may be that CCTV acts as a deterrent, which shoplifters eventually become immune to and surveillance by staff may then be necessary to apprehend those identified as thieves.

Other situation measures that may be implemented in retail stores include signage (e.g., “Shoplifters will be prosecuted”), ink tags for articles of clothing, regular stock-taking to reduce the incidence of employee theft, employee training, securing merchandise (e.g., lockable cabinets, chains), hiring consultants to raise awareness of theft prevention, shopping bag searches, and a range of CPTED strategies (especially in large shopping complexes). However, evaluations of the effectiveness of such measures are limited and have produced mixed results.

### ***5.2.3. Transportation Places***

Crimes that occur within transport places (e.g., buses, train stations, airports, car parks) include thefts from persons, fare evasion, robbery, physical and sexual assault and vandalism (Easteal & Wilson, 1991; Eck, 2006; Smith & Clarke, 2000; Webb & Laycock, 1992). Transportation places provide many opportunities for criminal activities, resulting from a wide range of situational-environmental factors, such as passenger crowding/density, poor lighting, poor environmental design, poor surveillance/supervision, and isolated stations/stops to name a few (Smith & Clarke, 2000). Once again, situational measures aimed at preventing crime in transportation places aim to reduce opportunities and potential rewards of crime, increase risks, and remove excuses (Smith & Clarke, 2000). Clarke and Smith (2000) argue that the two situational conditions of lack of supervision and overcrowding may be modified to produce crime prevention effects across a range of criminal offences.

#### **Crimes Facilitated by Lack of Supervision.**

Crimes that may occur partly because of inadequate supervision may include robbery and assault of passengers, robbery and assault of staff, vandalism, fare evasion, and staff theft of fares (Smith &

Clarke, 2000). Improving the levels of supervision in transport places may involve interventions such as increased staff, increased security guard/police presence, electronic surveillance (e.g., CCTV), passenger emergency alarms, and improved environmental design.

Webb and Laycock (1992) conducted an evaluation of pilot projects aimed at reducing crime in the London Underground subway system. The first project aimed to reduce robberies between Clapham North and Tooting Broadway through expanding the existing CCTV system, linking it to passenger alarms, and having the entire system continuously monitored. Other measures included staff radio contact with those monitoring the CCTV system, supervising passenger waiting areas, improving lighting, intensive policing, and installing mirrors on subway corners. The intervention was fully implemented in November 1988, with data on officially recorded robbery obtained up to 1990. Results indicated a dramatic reduction in robberies at the pilot stations in 1989, which was the first year after implementation. Robberies at the Clapham North-Tooting Broadway stations dropped from 52 in 1988 to 8 in 1989, which constituted an 85% reduction in robbery. Robberies in the whole system dropped from 1,128 incidents in 1988 to 746 in 1989, indicating that there were reductions in robbery across both pilot and control stations. In the first control stations (stations at south end of the Northern and Victoria lines), robbery was reduced from 80 incidents in 1988 to 56 in 1989, representing a 30 percent reduction, while in the second control stations (Highbury and Islington-Walthamstow Central) robbery was reduced from 97 incidents in 1988 to 43 in 1989, representing a 56% reduction. No statistical analyses were performed to examine the statistical significance of the differences in reductions between the pilot and control stations. The fact that robberies were also reduced in the neighbouring control stations suggested that there were no displacement effects (Webb & Laycock, 1992). The implementation of the surveillance and alarm systems resulted in an immediate drop in robbery, although results also suggested that robbery rates began to rise back to the original pattern in 1990. The actual effect of the surveillance and alarm interventions is difficult to determine from this evaluation, since the experimental intervention was confounded with other changes within the subway system.

Webb and Laycock (1992) also evaluated a near identical pilot program at Oxford Circus including the interventions of CCTV, passenger alarm points, and increased staff and police presence. The

interventions were found not to be effective at reducing the crimes of robbery, thefts from the person, or passenger results. It is likely that the effectiveness of any situational intervention in reducing crime is likely to be partly dependent on the existing environment.

In their systematic review of the effectiveness of CCTV at preventing crime, Welsh and Farrington (2002) reviewed evaluations assessing the impact of CCTV on public transport and in car parks. Overall, Welsh and Farrington (2002) concluded that the evidence concerning the effectiveness of CCTV interventions in public transport systems at preventing crime was mixed, with two of the programs they reviewed having desirable effects, one having no effect, and one having an undesirable effect on crime (Table 5.6). For those evaluations which did display reductions in crime from the use of CCTV, other interventions were also implemented making it difficult to isolate the effects of CCTV in reducing crime. In terms of CCTV interventions implemented in car parks reviewed by Welsh and Farrington (2002), the results were promising with five of the evaluations indicated desirable effects and one producing an undesirable effect (Table 5.7). In combining the results of the five CCTV car park evaluations, the results indicated that CCTV decreased vehicle crimes by approximately 28 percent in experimental areas when compared to control areas (Welsh & Farrington, 2002).

**Table 5.6: Evaluations Results of CCTV Interventions on Public Transport**

Author, Publication Date, and Location	Context of Intervention	Type and Duration of Intervention	Sample Size	Other Interventions	Outcome Measure of Interest and Data Source	Research Design Before-After Time Period	Results
Burrows (1979, 1980) "Underground", London	Public transport (subway)	CCTV; 12 months	E = 4 stations on southern sector, C1 = 15 other stations on southern sector, C2 = 228 other Underground stations	Notices of CCTV (also special police patrols preceded CCTV)	Personal theft and robbery; BTP records	Before-after experimental control Before = 12 months; after = 12 months	E vs C1: robbery: -22.2% (9 to 7) vs +23.1% (13 to 16); theft: -72.8% (243 to 66) vs -26.5% (535 to 393) E vs C2: robbery: -22.2% vs +116.3% (43 to 93); theft: -72.8% vs -39.4% (4,884 to 2,962) (desirable effect)
Webb and Laycock (1992), "Underground", London	Public transport (subway)	CCTV (expansion of) 26 months	E = 6 stations on south end of Northern line, C1 = 6 stations on north end of line, C2 = 236 other underground stations	Passenger alarms, visible kiosk monitor CCTV, mirrors, and improved lighting	Robbery; BTP records	Before-after experimental control Before = 46 months; after = 26 months Note: special policing used in E stations during first 3 years (1985-87) of before period (i.e., first 36 of 46 months of before period); in 1988 (remaining 10 months of before period), policing activity reduced in E stations	E vs C1 (monthly average): -62.3% (5.3 to 2.0) vs -50.0% (7.8 to 3.9) E vs C2: -62.3% vs -12.2% (69.6 to 61.1) (desirable effect) Note: for C2, Guardian Angels patrols began in May 1989 (7months into 26 months of after period)
Webb and Laycock (1992), Oxford Circus stations, "Underground", London	Public transport (subway)	CCTV (expansion of); 32 months	E = 1 station, C = 1 station	Passenger alarms, visible kiosk to monitor CCTV, and BTP patrols	Personal theft, robbery, and assault; BTP records	Before-after experimental control Before = 28 months; after = 32 months	E vs C (monthly average): robbery: +47.1% (1.7 to 2.5) vs +21.4% (1.4 to 1.7); theft: +11.0% (31.0 to 34.4) vs -1.9% (20.8 to 20.4); assault: +29.4% (1.7 to 2.2) vs +36.4% (1.1 to 1.5) (undesirable effect)
Grandmaison and Tremblay (1997), "Metro", Montreal, Canada	Public transport (subway)	CCTV; 18 months	E = 13 stations, C = 52 stations	None	Crime (total and multiple offences); police records	Before-after experimental control with statistical analyses Before = 18 months; after = 18 months	E vs C: total crime: -20.0% (905 to 724) vs -18.3% (1,376 to 1,124); robbery: -27.0% (141 to 103) vs -30.8% (312 to 216); assault: -27.5% (178 to 129) vs +5.6% (233 to 246); total theft and fraud: -15.5% (388 to 328) vs -16.0% (507 to 426) (null effect)

Notes: BTP = British Transport Police; E = experimental area; C = control area; "+" = increase; "-" = decrease.

Adapted from: (Welsh & Farrington, 2002, pp. 29-31).

**Table 5.7: Evaluations Results of CCTV Interventions in Car Parks**

Author, Publication Date, and Location	Context of Intervention	Type and Duration of Intervention	Sample Size	Other Interventions	Outcome Measure of Interest and Data Source	Research Design Before-After Time Period	Results
Poyner (1991), University of Surrey, Guilford	Parking lot	CCTV; 10 months	E = 1 parking lot (no. 4), C = 1 parking lot (no. 1)	Improved lighting and foliage cut back (for both E and C; only E recieved CCTV)	Theft from vehicles; private security records	Before-after experimental control Before = 24 months; after = 10 months	E vs C (monthly average): theft from vehicles: -73.3% (3.0 to 0.8) vs -93.8% (1.6 to 0.1) (undesirable effect)
Tilley (1993), Hartlepool	Car park	CCTV; 24 months	E = CCTV covered car parks, C = non-CCTV covered car parks Note: no. of E and C car parks n.a.	Security officers, notices of CCTV, and payment scheme	Theft of and from vehicles; police records	Before-after experimental control Before = 15 months; after = 30 months	E vs C: theft of vehicles: -59.0% (21.2 to 8.7 per quarter year) vs -16.3% (16.0 to 13.4 per quarter year); theft from vehicles: -9.4% (6.4 to 5.8 per quarter year) vs +3.1% (16.0 to 16.5 per quarter year) (desirable effect)
Tilley (1993), Bradford	Car park	CCTV; 12 months	E = 1 car park, C1 = 2 adjacent car parks, C2 = adjacent street parking	Notices of CCTV, improved lighting, and painting	Theft of and from vehicles; police records	Before-after experimental control Before = 12 months; after = 12 months Note: a third C is used, but is less comparable than C1 or C2	E vs C1: theft of vehicles: -43.5% (23 to 13) vs +5.9% (17 to 18); theft from vehicles: -68.8% (32 to 10) vs +4.5% (22 to 23) E vs C2: theft of vehicles: -43.5% vs +31.8% (22 to 23); theft from vehicles: -68.8% vs +6.1% (33to 35) (desirable effect)
Tilley (1993), Coventry	Car park	CCTV; various	E = 3 car parks (BAR, BON, WHI), C = 2 car parks (FAI, GRE)	Lighting, painting, and fencing	Theft of and from vehicles; police records	Before-after experimental control Before and after 8 months (E) and 16 months (C)	E vs C: theft of vehicles: -50.5% (91 to 45) vs -53.6% (56 to 26); theft from vehicles: -64.4% (276 to 101) vs -10.7% (150 to 134) (desirable effect)
Sarno (1995, 1996), London Borough of Sutton	Car park	CCTV; 12 months	E = 3 car parks in part of Sutton police sector, C1 = rest of Sutton sector, C2 = all of Borough of Sutton	Multiple (e.g., locking overnight, lighting)	Vehicle crime; police records	Before-after experimental control Before = 12 months; after = 12 months	E vs C1: -57.3% (349 to 149) vs -36.5% (2,367 to 1,504) E vs C2: -57.3% vs -40.2% (6,346 to 3,798) (desirable effect)

Notes: All locations were in the UK; E = experimental area; C = control area; n.a. = not available; "+" = increase; "-" = decrease.  
Adapted from: (Welsh & Farrington, 2002, pp. 35-36).

Natural surveillance may also be used effectively to reduce levels of crime at transport places. An experiment was conducted in the Dutch public transport system that sought to reduce fare-dodging, vandalism, and aggression through employing 1,200 unemployed young people (known as the VICs) to increase surveillance, improve the information and service available to customers, and confront the problems of fare-dodging, vandalism, and aggression (van Andel, 1989). The experiment utilised a quasi-experimental design with pre- and post-measures for fare-dodging, vandalism, and assaults, and was implemented in three city transport systems in 1987 (Amsterdam, Rotterdam, and The Hague). Results indicated that the percentage of fare-dodgers fell in the three cities after the introduction of VICs, with the decline most pronounced during rush hours on weekdays. In Amsterdam, the percentage of fare-dodgers on the tram fell from 18% to 9% and 24% to 7% on the metro system. In Rotterdam, the percentage of fare-dodgers fell from 6% to 4% on the tram, 4% to 3% on the metro, and 4% to 1% on buses. In The Hague, the percentage of fare-dodgers on trams fell from 14% to 10% and fell from 14% to 2% on buses. The percentage of passengers reporting having seen someone attacked or harassed during a three month period in 1985 was 11%, which dropped to 3% after the implementation of the program. The percentage of individuals reporting victimisation fell from 5% in 1985 to 2% after implementation. The results further indicated that the intervention was effective at reducing the incidence of vandalism on public transport. However, the program did not appear to be cost-effective as an undesirable benefit-cost ratio of 0.32 was produced. The results of the experiment suggest that increasing surveillance on public transport is an effective means of preventing crime.

### Crimes Related to Overcrowding

Crowding in public spaces provides increased opportunities for many criminal activities (Smith & Clarke, 2000). For example, overcrowded conditions may provide more potential targets for thieves. The main means through which overcrowding can be overcome is through environmental design to better manage the flow of individuals through places that experience high levels of human traffic (Smith & Clarke, 2000). Also transportation capacities may be increased to deal with increased passenger loads. The problem with such methods is that they cost substantial amounts of money to implement. There exist few rigorous empirical evaluations using randomised control designs of interventions aimed at modifying the environment to prevent crime in transport-related places. While there is evidence to support the effectiveness of designing in crime prevention measures to new transport places to reduce the incidence of crime (La Vigne, 1996), there is limited evidence

supporting the effectiveness of modifying existing transport environments in reducing crime (Eck, 2006; Smith & Clarke, 2000).

The crime preventing effects resulting from environmental redesign are difficult to quantify, since many redesign programs implement numerous interventions at once (Felson et al., 1996). For example, Felson et al (1996) described the implementation and evaluation of the redesign of the Port Authority bus terminal in New York City, which was a vast and complex urban transit station with extremely high levels of crime. Over 60 design modifications were made to the terminal, which included such measures as restricting access, improving visibility, movement and natural control, and increasing enforcement. The evaluation of the redesign interventions indicated that rates of robbery and assault declined at the station, although they also declined in surrounding areas. Incivilities and disorder were also reduced within the station. Due to the number of modifications implemented in the redesign, it was not possible to isolate the effectiveness of individual redesign interventions in reducing crime.

#### ***5.2.4. Other Public Places***

As mentioned earlier, criminal activity tends to be clustered within particular geographic areas. Research indicates that there is a strong association between the presence of bars and crime within venues and the surrounding area (Eck, 2006; Homel & Clark, 1994). Alcohol and high densities of individuals are likely to be the major contributing factors involved in violent crimes (e.g., physical and sexual assault) within and around entertainment/drinking venues (Homel & Clark, 1994). Situational measures aimed at violent crime prevention within and around drinking venues may involve a range of interventions aimed at preventing and managing alcohol intoxication, such as responsible serving programs as well as target hardening and access control interventions (Homel & Clark, 1994).

Homel et al (1997) conducted an evaluation of a project that sought to reduce violence and disorderly behaviour in and around bars on the Gold Coast (QLD, Australia) through agreements among bar managers to improve the training of bouncers, reducing crowds of young people, improve relationships with police, and other tactics aimed at improving responsible drinking serving. The project was implemented in March 1993 (pre-project January – March 1993; implementation April – July 1993; post-project August – December 1993). Data was derived from

community surveys, interviews with bar licensees, direct observations of premises, incidents recorded by security companies, and official police records. In the first year of the program, physical assaults were found to have decreased by 52% in terms of assaults per 100 hours of observation. Police records indicated that there was a decline in assaults by 34% in 1993 compared to 1992 during the same period. Further follow-up data indicated that the prevention effects of the program decayed over time. The program was replicated in the Queensland towns of Cairns, Townsville, and Mackay, where the data obtained from 164 hours of venue observations in 1994 and 230 hours in 1996 indicated that there was a 75% drop in assaults and a 49% drop in all forms of verbal aggression. These results strongly suggested that the program was effective in reducing violence, crime and disorder in high crime entertainment areas where alcohol is consumed. The effective management of drinking places is likely to be a vital component of crime prevention interventions aimed at reducing alcohol-related offences.

A further method of reducing crime in places is through street closures. Areas that are easily accessible in terms of street layouts are more likely to have higher rates of criminal activity, including drug-related offences and prostitution offences (Eck, 2006; Matthews, 1997). Wagner (1997) conducted an evaluation of the effectiveness of a traffic modification intervention at reducing crime implemented in a neighbourhood in St. Louis, Missouri in the United States in 1984. The intervention was entitled Operation Safestreet, and consisted of five components: (i) requiring residents to keep their porch-lights on from dusk until dawn, modification of vehicular traffic patterns through street closings and/or diversions to discourage non-resident access, (ii) enhancing resident's sense of community and increasing residents abilities to detect strangers and suspicious occurrences, (iii) the installation of target hardening devices (deadbolt locks, window pins, peep-holes for doors, basement door barricades, and window bars), (iv) neighbourhood watch, and (v) a regular newsletter to keep residents informed and to offer crime prevention tips (Wagner, 1997). Results of the evaluation of the modification of traffic patterns component indicated that the experimental neighbourhood had a lower rate of increase in crime when compared to the control neighbourhood (3% increase in experiment neighbourhood; 8% increase in control neighbourhood; 6.1% increase in the police district of the city). These results suggest that traffic modifications may be effective in reducing crime. From a review of the available evidence, Eck (2006) concluded that street closures are promising interventions in reducing crime, although may be more effective when they are used in conjunction with other crime prevention efforts.



Nuisance abatement programs have been implemented as measures to force owners of property to take action to deal with crime problems that occur on their properties (Eck, 2006; Werdegar, 1999). Nuisance abatement programs threaten owners through the use of civil law actions to take action in controlling the activities of individuals on their property. For example, property owners may be issued nuisance abatements to make physical changes to their properties or evict problem tenants in an effort to reduce drug-related crimes (Eck, 2006). From a review of three case studies in St. Louis (US), evidence indicated that through the change in ownership of drug houses facilitated by police, calls for service in the blocks where ownership changes occurred reduced by 54% to 94% when compared to nearby blocks, suggesting that there was a reduction in drug selling (Hope, 1994). More rigorous evaluations of abated drug dealing sites have reported that such interventions were effective in reducing drug and disorder problems at target sites and also at sites surrounding targeted areas (Green, 1995).

### **5.3. Conclusion**

Evaluations of SCP interventions are predominately short-term, resulting in a situation where little is known concerning the durability of the effectiveness of such interventions at reducing crime over the long-term. There is a great need for further methodologically rigorous empirical evaluations to determine the effectiveness of many SCP interventions. However, the prevention of crime through blocking criminal opportunities appears to be promising in terms of the abilities of SCP interventions to produce reductions across a wide range of criminal activities. Future research needs to establish which SCP interventions work for particular places and crimes, that is, there is a need to understand the interaction between place and crime, and how best to design and implement interventions to modify this interaction. Many evaluations of SCP interventions tend to be case studies of single implementation sites, which creates the problem of generalisation (Eck, 2006). It may be that the effectiveness of SCP interventions is tied to specific environmental characteristics of the places they are implemented in.

This suggests that SCP interventions must be adapted to suit the conditions of the places they are to be implemented in to give interventions an optimal chance at producing meaningful change in specific situations. As a result, problem-solving approaches appear to be promising in producing meaningful reductions in offending, where problems are first identified and interventions are then

designed and implemented to deal with those problems. The available evidence indicates that the effects of displacement as a result of opportunity blocking are limited, although this may be due to researchers not always examining displacement effects in evaluations of interventions. Furthermore, a promising effect of many SCP interventions appears to be the diffusion of benefits, where positive effects are often transferred to surrounding areas. We emphasise from the review of SCP interventions, that such approaches are promising, although more research is needed to establish their effectiveness in specific places and for specific crimes.

## Chapter 6. Discussion

In this chapter, an overview of the aims of this report and key findings will be provided. The four strategies that can be used to reduce juvenile offending will be highlighted and the efficacy of each approach will be examined. The limited research that has explored the efficacy of programs for Indigenous people will be highlighted along with the few studies that have included cost-benefit analyses. The chapter will conclude by examining the need for more scientifically rigorous research in this area, commenting on the feasibility of conducting meta-analyses of the various program options.

### 6.1. Aims of the Report

The Department of Communities was interested in exploring the efficacy of a range of strategies available to reduce juvenile offending/recidivism and contracted Justice Modelling @ Griffith to undertake this literature review. The literature review was to include an overview of the main strategies available to reduce juvenile offending/recidivism to facilitate best practice and provide an evidence base for the implementation of programs. The scope of the review was limited to:

- (i) Summarising the strategies that are available to reduce juvenile offending/recidivism as identified by Tonry and Farrington (1995).
- (ii) Examining the key features of programs that have been implemented within each strategy.
- (iii) Exploring the evidence base of each strategy by examining the effectiveness of programs in terms of reducing juvenile offending/recidivism.
- (iv) Noting the cost of programs and outcomes of any cost-benefit evaluations that have been undertaken (if available).
- (v) Commenting on the feasibility of conducting meta-analyses on the various program options.
- (vi) Based on available evidence, providing a summary of the effectiveness of each strategy.
- (vii) Where possible, providing an assessment about the effectiveness of programs for Indigenous young people.

The literature review was to include programs implemented in Australia and internationally and be focused on programs that have been evaluated and which were publicly available.

## **6.2. Efficacy of Strategies at Preventing Juvenile Offending**

The interventions discussed in this report were classified according to Tonry and Farrington's (1995) four groupings of crime prevention strategies and evidence about the efficacy of each strategy was examined. These strategies included: (i) developmental and early intervention strategies, (ii) law enforcement and criminal justice strategies, (iii) community crime prevention, and (iv) situational crime prevention.

### Developmental or Early Intervention Strategies

The impact of developmental or early intervention strategies on offending has been explored using scientifically rigorous evaluations involving random controlled trials. These strategies aim to reduce the likelihood of offending by focusing on developmental risk and protective factors and targeting those most at-risk of developing anti-social behaviour. Meta-analyses conducted by the Washington State Institute for Public Policy (2001, 2004, 2006) and Farrington and Welsh (2003) indicate that these programs typically result in reductions in offending by about 15%. An examination of eight studies that had long-term follow-up evaluations and explored the impact on intervention on offending indicated that specific programs reduced offending by between 18% and 91%. Three of the four programs subjected to cost-benefit analyses were deemed to be cost-effective.

### Law Enforcement and Criminal Justice Strategies

Law enforcement and criminal justice strategies are implemented after a crime has been committed and operate both directly through deterrence, incapacitation, and rehabilitation and indirectly through the effects of socialisation. Evidence suggests that there are several economically efficient interventions, including diversion through the use of "change agents", functional family therapy, family integrated transitions, aggression replacement training, and teen courts. Several other programs were also cost-effective, although to a lesser extent, including multidimensional treatment foster care, interagency coordination programs, restorative justice for low risk offenders, and juvenile drug courts. Although not resulting in savings from reduced recidivism, juvenile boot camp to offset institutional time and intensive probation as an alternative to detention were also found to be cost-effective. The review indicated that there was insufficient evidence to determine whether multi-systemic therapy was effective at reducing recidivism and that incarceration should be used as an option of last resort given the potential for criminogenic effect and its substantial cost.

### Community Crime Prevention

Community crime prevention focuses on interventions that change the social conditions that influence offending. The review took a broad approach to examining this perspective and found that most interventions had not been subjected to scientifically rigorous impact evaluations to determine whether they have an impact of offending. Indeed, none of the interventions reviewed can be said to have an impact on delinquency. There is scant evidence to suggest that community economic development interventions, mentoring programs, job/vocational training programs, weed and seed programs, and recreation interventions may reduce delinquency. There is insufficient evidence to determine whether community policing, community mobilisation, or school/after-hours programs reduce delinquency. Evidence does indicate that Neighbourhood Watch (a form of community mobilisation) and removing criminogenic commodities are not effective at reducing delinquency.

### Situational Crime Prevention

Situational crime prevention (SCP) strategies focus on the immediate environment where crime is committed and aim to reduce the opportunities for crime. Evaluations are typically short-term, methodologically weak, and it is often difficult to determine the impact of a specific technique on crime because multiple techniques are frequently implemented at the same time. The scientific study of the efficacy of SCP techniques has begun to focus on what techniques are effective based on the purpose of particular locations. Findings indicate that while a few techniques ‘work’ or are viewed as ‘promising’, the efficacy of most techniques remain ‘unknown’ due to inconsistent findings. Many of the interventions reviewed were one-off case studies examining the impact of techniques or multiple techniques in one site over short periods of time. Evidence suggests that SCP techniques can result in reductions in crime. Consequently, problem-solving approaches appear to be promising in producing meaningful reductions in offending, where problems are first identified and interventions are then designed and implemented to deal with those problems.

## **6.3. Programs for Indigenous Young People**

The lack of rigorous evaluations is particularly evident in the area examining strategies to reduce Indigenous offending. Although Indigenous offenders are over-represented in all stages of the juvenile justice system, few studies have explored the efficacy of programs for Indigenous young

people. In part, this is because most of the research that has explored the efficacy of interventions is international. Additionally, scientifically rigorous research differentiating young people based on ethnicity may not have been conducted because this information or data were not collected. For example, it only became mandatory for agencies and departments in Queensland to collect information about Indigenous status in January 2003.

Of the few studies that have examined Indigenous status, evidence indicates that Indigenous young people are less likely than non-Indigenous young people to be referred to diversionary processes (cautioning and conferencing) and those that are diverted appear to have a greater risk of re-offending (Polk, Adler, Muller, & Rechtman, 2003). Evidence also indicates that Indigenous young people are under-represented in treatment programs and do not respond well to interventions (Day, Howells, & Rickwood, 2003).

While more research is required, it has been suggested that mentoring programs are likely to be effective for Indigenous young people and that culturally specific treatment programs need to be developed (Wilczynski et al., 2003). It has been argued that Indigenous offenders are likely to have higher levels of criminogenic and non-criminogenic needs when compared to other groups of offenders and that treatment programs and interventions need to target culturally specific needs (Day et al., 2003). The factors that may be relevant to the needs of young Indigenous offenders may include: alienation in the predominantly non-Indigenous Australian justice system, the relatively young age of Indigenous offenders, the isolation of young people due to their geographical separation from family/cultural group, the transitory nature of support systems, lower levels of functional literacy, specific health needs, the high profile of Indigenous individuals upon release, the social status of offending among peers, and the difficult circumstances encountered upon release (Day et al., 2003, p. 74).

#### **6.4. Cost Benefit**

Despite the importance of economic efficiency, relatively few studies have examined the cost-benefits of interventions. The meta-analyses conducted by the Washington State Institute for Public Policy (2001, 2004, 2006) on developmental interventions and criminal justice interventions suggests that many options are a cost-effective means of reducing offending. Evidence suggests that early intervention is likely to result in cost savings when the future savings for taxpayers are

combined with savings for crime victims. Criminal justice interventions appear more promising than other types of interventions, as ten interventions reviewed by the Washington State Institute for Public Policy were projected to produce cost-savings for tax payers, most notably diversion involving the use of “change agents”, functional family therapy, family integrated transitions, aggression replacement training, multi-systemic therapy, and teen courts.

Information obtained about the cost-benefits of interventions from other sources also indicated that three of the four developmental interventions reviewed resulted in cost-savings. The most cost-effective program was the High/Scope Perry Preschool Study, which resulted in savings of US\$17.07 for each dollar invested in the program (Schweinhart, 2004). Fewer cost-benefit analyses have been conducted on community, situational, and criminal justice interventions. The Job Corps program was found to have a benefit-cost ratio of 1.45, with reduced justice system costs accounting for about one-quarter of the total benefits (Long, Mallar, & Thornton, 1981). One study examining target hardening found target hardening to be cost-effective, while another study focusing on increasing natural surveillance reported that it was not cost-effective (Welsh & Farrington, 2001).

## **6.5. Conclusions**

There is a clear need for more scientifically rigorous research to determine the efficacy of interventions aimed at reducing juvenile offending/recidivism. While the efficacy of interventions based on the developmental crime prevention and criminal justice approaches are promising, the effectiveness of such interventions is not a foregone conclusion and further research is needed to determine whether replicated programs produce similar findings. The very nature of community and situational approaches makes scientifically robust research of interventions based on these approaches difficult and further research is needed to determine the efficacy of interventions. While there are ethical and practical issues that inhibit the ability to undertake scientifically rigorous research of law enforcement and criminal justice interventions involving random controlled trials, such research is needed to determine the efficacy of interventions. Given the over-representation of Indigenous young people and the importance of economic efficiency, future research should include an examination of ethnicity and cost-benefit into their design.

Additionally, there is a need for comprehensive systematic literature reviews including meta-analyses to provide an evidence base so that practitioners can make the best informed decisions. Such reviews take considerable time and are costly, given that a large number of studies must be obtained, reviewed, and re-analysed. Throughout this literature review, reference was made to numerous reviews and meta-analyses that have been conducted of crime prevention programs (Sherman et al., 1997), family-based programs (Farrington & Welsh, 2003; Welsh & Farrington, 2006), criminal justice interventions (Washington Institute for Public Policy, 2001, 2004, 2006), and situational interventions involving improved street lighting, closed-circuit television surveillance, and hot spot policing (Braga, 2005; Farrington & Welsh, 2002; Welsh & Farrington, 2002). In this context, it should be noted that the Home Office (UK) is currently undertaking a systematic review of juvenile justice interventions and the findings of this review are expected to be published in 2009.



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Queensland  
Government

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Department of Communities

INVITATION TO OFFER  
CONSULTANCY SERVICES

The Effectiveness of Strategies to Reduce Juvenile Offending

## **SPECIFICATION**

### **PURPOSE OF THE CONSULTANCY**

The Department of Communities is interested in examining the effectiveness of a range of strategies available to reduce juvenile (up to age eighteen) offending/re-offending. The purpose of this consultancy is to provide a thorough overview of programs that may reduce juvenile offending/re-offending to facilitate best practice and provide an evidence base for the implementation of these programs.

The department is seeking to engage a consultant to conduct a literature review examining the effectiveness of strategies available to reduce juvenile offending/re-offending and to report on the feasibility of conducting meta-analyses (for example, see Farrington & Welsh, 2003) on the various types of programs.

### **SCOPE**

Tonry and Farrington (1995) identified four crime prevention strategies: (i) developmental or early intervention, (ii) community, (iii) situational, and (iv) law enforcement and criminal justice strategies. The first three of these strategies occur prior to an offence being committed and reduce the likelihood of a crime occurring. Law enforcement and criminal justice strategies are implemented after a crime has been committed as the imposition of sanctions (such as incapacitation, conferencing, and cautioning) and rehabilitation programs may reduce recidivism.

The consultant will be required to conduct a literature review that examines the effectiveness of strategies that reduce juvenile offending/re-offending within this framework. The literature review should:

- (i) Summarise the strategies that are available to reduce juvenile offending/re-offending as identified by Tonry and Farrington (1995).
- (ii) Examine the key features of programs that have been implemented within each strategy.
- (iii) Explore the evidence base of each strategy by examining the effectiveness of programs in terms of reducing juvenile offending/re-offending.
- (iv) Note the cost of programs and outcomes of any cost-benefit evaluations that have been undertaken (if available).
- (v) Comment on the feasibility of conducting meta-analyses on the various program options.
- (vi) Based on available evidence, provide a summary of the effectiveness of each strategy.
- (vii) Where possible, provide an assessment about the effectiveness of programs for Indigenous young people.

The literature review should include programs implemented within Australia and internationally and be focused on programs that have been evaluated and which are publicly available.

While three of the strategies that may reduce juvenile offending (developmental or early intervention, community, and law enforcement and criminal justice) focus on the offender, situational crime prevention is offence based. Given this, difficulties may arise in assessing how effective situational crime prevention is at reducing juvenile offending. The consultant will need to determine the crime types that are committed by a significant number of juveniles within the Queensland context and explore how effective situational techniques are at preventing these crimes.

## **TIME FRAMES**

- Provision of Draft Report to Project Manager by 18 December 2006 so that the department can review the report and provide feedback.
- A Final Report incorporating departmental feedback within two weeks of receiving feedback.

## **REPORTING REQUIREMENTS**

- The consultant to meet with the Project Manager prior to the consultancy to ensure there is a mutual understanding of requirements.
- *The Effectiveness of Strategies to Reduce Juvenile Offending* Draft Report is to be emailed to the Project Manager by the due date.
- The consultant to meet with the Project Manger after the Draft Report has been submitted to receive the departmental feedback to be incorporated into the Final Report.
- Five bound copies of the Final Report incorporating departmental feedback are to be presented in writing within two weeks after receiving departmental feedback.

## **COSTING OF THE CONSULTANCY**

- The consultant is required to provide the Department of Communities with a breakdown of the total cost of the consultancy.

## **PAYMENT OF FEES**

- The consultant will be paid in full on receipt of the Draft Report of satisfactory standard to the Project Manager.

## **REFERENCES**

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