

## Watched over or over-watched? Open street CCTV in Australia

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# Watched Over or Over-watched? Open Street CCTV in Australia

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Most developed countries, Australia included, are witnessing increased government and public concerns about crime and security. Amid these anxieties, closed circuit television (CCTV) systems to monitor public spaces are increasingly being touted as a solution to problems of crime and disorder. The city of Perth established Australia's first open street closed circuit television system in July 1991. Subsequently, there has been significant expansion. At the end of 2002 Australia had 33 "open street" CCTV schemes. Based on site inspections, extensive reviews of documentation and interviews with 22 Australian administrators, this article discusses issues relating to system implementation, management and accountability. We also suggest ways relevant authorities might ensure that current and future schemes are appropriately audited and evaluated. We argue that rigorous independent assessment of both the intended and unintended consequences of open street CCTV is essential to ensure this measure is not deployed inappropriately. Finally, this article suggests any potential crime prevention benefits must be carefully weighed against the potential of CCTV to exacerbate social division and exclusion.

Most developed countries, Australia included, are witnessing increased government and public concerns about crime and security. One indicator has been more widespread use of closed circuit television (CCTV) to monitor public space. In Australia "open street" or "Town Centre" CCTV refers to visual surveillance systems established in the main by local government authorities in cooperation with police to monitor public spaces such as malls and major thoroughfares. This study is therefore not concerned with other uses of CCTV such as the use of surveillance cameras on public transport networks, within privately regulated commercial spaces such as casinos and shopping malls, or in retail outlets. The city of Perth established Australia's first open street closed circuit television system in July 1991. Subsequently there has been rapid expansion. At the end of 2002

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Australia had 33 such schemes, with the Northern Territory the only Australian jurisdiction without a CCTV-monitored streetscape or public mall.

In addition to providing an overview of public space CCTV in Australia, this article documents international developments and summarises relevant research. Based on site inspections, extensive reviews of documentation and interviews with 22 Australian administrators, it canvasses issues relating to system implementation, management and accountability.<sup>1</sup> We also discuss ways relevant authorities might ensure that current and future schemes are appropriately audited and evaluated. While the precise impact of CCTV on crime and perceptions of safety remains unclear, its use in open street settings in Australia is poised to expand. Local authorities continue to be enthusiastic and several State governments have endorsed this approach. Rigorous independent assessment of both the intended and unintended consequences of public space CCTV will help ensure that the significant funds allocated to this form of crime prevention are not wasted and that untoward social impacts are minimised.

### **Open Street CCTV: A Global Trend**

Australia is not the only country to have embraced open street CCTV. Strongest evidence of the “surveillance revolution” is in the United Kingdom (UK). British police had been using CCTV to monitor public areas since the 1960s (Williams, 2003). However, the first open street system with significant local government involvement commenced in Bournemouth in 1985. Rapid expansion occurred from 1994 onwards, when as part of its “law and order” agenda the Conservative government signalled strong support for CCTV in town centres. Financial support from the Home Office was significant. In 1995, 78% of the Home Office budget for crime prevention was spent on open street CCTV and by 1999 funding had been allocated to 530 town centre schemes operating or scheduled for establishment across the United Kingdom. British government support for CCTV has not declined under the Blair Labour government, which made £50 million available in 1999 and £103 million in 2000 (Williams, Johnstone, & Goodwin, 2000, p. 170).

Two recent reports document expansion of open street video surveillance in other parts of the European Union (Hempel & Töpfer, 2002; Meijer, 2000). The most surveilled territory is the tiny principality of Monaco with 60 pan-tilt-zoom cameras monitoring both private and public spaces (Hempel & Töpfer, 2002, pp. 9–10). Other countries to implement schemes include the Republic of Ireland, France (which approved installation of 200 public space CCTV systems between 1997 and 1999), Belgium, Spain, Germany, Finland, Sweden and Norway (Hempel & Töpfer, 2002). In Italy CCTV is used in Rome, the Vatican and other high profile tourist areas (Nieto, 1997, p. 9). In the Netherlands public space CCTV is a comparatively recent development — however, it is estimated to have been adopted by at least 20 of the country’s 500 municipalities (Hempel & Töpfer, 2002, p. 11).

The extent of public space video surveillance outside Europe is less clear. A recent report (Nieto, Johnston-Dodds, & Simmons, 2002) notes rapid expansion in use of CCTV and associated biometric technology in the United States (US) in the wake of the September 11, 2001 terrorist attacks on the World Trade Centre. These researchers document 21 schemes across the US, but concede their survey is

not comprehensive. It should be noted, however, that a police administered system proposed for Washington DC would link as many as 1000 cameras in streets, subway stations, schools and federal facilities (Hsu, 2002).

Even less is known about video surveillance in Canadian public areas. However, systems are believed to be in place in Ottawa, Toronto, London, Peterborough, Sudbury, Hamilton, Vancouver, Kelowna, Sherbrooke and Hull (Queens University Surveillance Project, 2002).

Other countries to implement open street CCTV include South Africa (Glanz & Nacerodien, 1997; Palmary, 2001) and New Zealand (Crime Prevention News, 2001; Waters, 1996a). Nieto (1997, p. 9) notes that CCTV also has been in use in public locations in the Russian Federation, China, Iran and Iraq. In China an advanced traffic control system sold to the government by Siemens Plessey was used to identify thousands involved in the 1989 Tiananmen Square protests. Images were broadcast on television, with rewards for information on those shown. Surveillance systems are also being installed in Lhasa, Tibet — ostensibly for traffic control, although Lhasa does not presently seem to have traffic problems (Scientific and Technological Options Assessment (European Parliament), 1998, p. 4). As part of a nationwide surveillance project known as “Golden Shield”, China is reported to be establishing a national network of public space CCTV to improve the police response to outbreaks of social unrest (Walton, 2001, p. 16). Singapore also has an extensive network of public surveillance cameras for traffic control and to prevent littering (Privacy International, 1999).

### **The Rise of Open Street CCTV: Explanations and Concerns**

In part, the rapid take-up of public CCTV has been driven by technical developments. These have included advances in video and digital imaging and recording. CCTV was first applied to crime control in 1967 with the launch in the UK of Photoscan, a retail sector system designed to deter and apprehend shoplifters (Norris & Armstrong, 1999, p. 18). It is important, however, to avoid technological determinism. Criminologists have also linked the rise of CCTV to economic and social transformations. Relevant theories include the following.

#### **The Rise of the “Stranger Society”**

Sociologists such as Lash and Urry (1994) argue that in contemporary post-industrial contexts, people are increasingly removed from familial and other traditional constraints and obligations, and dislocated from community networks. A lack of personal knowledge of fellow citizens contributes towards greater wariness of others and, some argue, a fear of “difference” (McCahill, 2002, p. 19; Norris & Armstrong, 1999, pp. 22–23).

#### **The Risk Society and Actuarial Justice**

Ulrich Beck (1992) and Anthony Giddens (1990) see constant awareness and assessment of risk as one of the defining characteristics of complex contemporary societies. This has implications for crime control. Feely and Simon (1994) posit a declining faith in the “old penology” that focussed on diagnosis of problems, intervention and treatment at the level of the individual. They suggest the emergence

of a new “actuarial” approach that attempts to manage risk by regulating whole populations (McCahill, 2002, p. 17). New surveillance technologies can be seen as part of this shift.

### The Entrepreneurial City and the Exclusionary Impulse

Several commentators (e.g., Bannister, Fyfe, & Kearns, 1998; Dees, 2000; Fyfe & Bannister, 1996) link the rise of CCTV to the tendency for urban centres to be transformed from sites of production to sites of consumerism and consumption. They argue that populations are being divided into competent and “flawed” consumers — the latter lacking resources to participate in a consumerist economy. The globalising of commerce has also led to a commodification of individual town and city centres. Such centres are increasingly image conscious and CCTV has played an important part in marketing public areas to tourists, other consumers and investors as “risk-free” (McCahill, 2002, p. 12). Intertwined with the reshaping of urban images has been the rise of an exclusionary impulse — a desire to rid public spaces of “flawed consumers”. As McCahill suggests, “the visibility of unemployed or homeless people on the streets or hanging around in shopping centres constitutes a crisis in the city’s official representation and obstructs belief in the positive vision that the image-makers attempt to portray” (2002, p. 13).

The “entrepreneurial city” thesis is supported, to some extent, by the fact that both in Australia and the UK local authorities — which are often dominated by business interests — have been among the most enthusiastic advocates of open street CCTV. Clearly, the technology can be used in ways that exacerbate social divisions. It should be noted, however, that the monitoring of populations and possibilities for discrimination and unwarranted social exclusion can be even more intense in the large enclosed shopping complexes and other forms of “mass private space” with which public malls and street shopping centres are striving to compete (Davis, 1990; White & Sutton, 1995). Banning or significantly reducing the use of open street CCTV would not necessarily ensure that contemporary urban centres became more socially inclusive.

Other concerns about CCTV relate to the possibility that surveillance will be used to undermine individual freedoms and facilitate oppressive forms of social control (Lyon, 1994; Lyon & Zuriek, 1996; Norris, Moran, & Armstrong, 1998). As noted, the Chinese government has already used camera systems to identify and help apprehend individuals involved in the 1989 Tiananmen Square protests. Simon Davies, Director-General of Privacy International, is a trenchant opponent of CCTV, arguing its effectiveness has not been demonstrated and that it represents an unacceptable threat to civil liberties (1996a, 1996b, 1998).

Critiques such as the above highlight the urgent need for public CCTV to be properly managed and accountable. Maguire (1998) raises serious concerns about the absence of a regulatory framework for such systems in Britain. The Fifth Report of the House of Lords Science and Technology Committee (1998) makes similar criticisms and has recommended licensing and enforceable codes of practice. The UK Data Protection Commissioner has subsequently issued a code of practice outlining the obligations of CCTV system operators under the *Data Protection Act 1998*. Later, we discuss the relevance to Australia of these and other recommendations.

**TABLE 1**

Number of Open Street CCTV Systems by State or Territory (As at October 2002)

New South Wales	11
Queensland	10
Western Australia	4
Victoria	3
Tasmania	3
South Australia	1
Australian Capital Territory	1
Northern Territory	0
Total	33

### Open Street CCTV in Australia

As noted, there has been rapid take-up of open street CCTV in Australia since the first system was established in 1991. While most systems were initially located in the Central Business Districts of capital cities, there is a notable trend toward open street surveillance in smaller regional and rural centres and in suburban locations.

The push to establish CCTV in Australia has generally come from local government. One consequence of this is that town centre systems display wide variation in administrative controls, funding models, operational practice and technology. When establishing new systems, local authorities have tended to rely on the experience of other councils and on security consultants.

While primarily a local-level initiative, the establishment of CCTV in Australian town centres has not been without State government involvement. Such involvement may well intensify in the near future. Both in Tasmania and South Australia, initial capital costs were covered in part by State government. In Queensland, State funding for CCTV is increasing. Since 1999 the Queensland State Government's Department of Local Government and Planning has administered a Security Improvement Program (SIP) offering funding for local government security programs. A number of councils have taken advantage of the program to install video surveillance. The Queensland Premier's Department has also recently released guidelines for councils considering the installation of CCTV (2002).

In New South Wales (NSW) the State Government, while not providing direct funding, has also demonstrated interest. The Crime Prevention Division of the New South Wales Attorney-General's Department has sought to advise local governments on video surveillance, issuing Guidelines for CCTV (Crime Prevention Division, 2000).

State governments represent a valuable source of information, and in some jurisdictions potential funding, for local authorities contemplating open street CCTV. They also are a potential source of regulation and accountability. Increased involvement by State authorities may foreshadow a new phase in the management of town centre systems in Australia, which for the past decade have been subject only to self-regulation.

## Regulation of Open Street CCTV in Australia

Currently there is no specific Federal, State or Territory legislation covering CCTV in public areas. Overt surveillance, of which town centre CCTV systems are one form, has recently been the subject of inquiry by law reform commissions in two Australian States (NSWLRC, 1997, 2001; VLRC, 2001).

The most recent interim report on surveillance released by the New South Wales Law Reform Commission (NSWLRC) draws attention to the lack of regulation of overt surveillance. This report noted that

there is very little to fetter the unrestricted use of overt surveillance, other than codes which are adhered to voluntarily and lack sanctions for breach, or a patchwork of common law remedies which are inapplicable in the vast majority of cases (NSWLRC, 2001, p. 150).

The NSW Commission proposes a model Surveillance Act, some sections of which directly relate to the regulation and operation of town centre CCTV. Significant elements of the proposed legislation are consistent with codes of practice already in place for many schemes. However, the proposed legislation does envisage an expanded regulatory role for the Office of the Privacy Commissioner. Such legislation is likely to be beneficial both for the general public and for system operators and may provide a guide for the rest of Australia.

The Victorian Law Reform Commission has also noted the absence of regulation. Its 2001 report sees this as a major deficiency in the Victorian *Surveillance Devices Act 1999*, which covers only "private activities" and precludes any regulation of surveillance of activities taking place outside buildings or in any situation where the parties might reasonably expect they will be observed by someone else (VLRC, 2001, p. 42). The Commission notes that "the regulation of mass surveillance in public places is a substantial gap in the privacy protection offered in Victoria" and identifies this as a priority area for law reform (VLRC, 2001, p. 46).

In 2000 a Bill was introduced into the ACT Legislative Assembly by the then Labor opposition that would have represented the first statutory regulation of overt visual surveillance in Australia. The *Surveillance Cameras (Privacy) Bill 2000* proposed statutory control over visual surveillance in public spaces, including the right of the subjects of surveillance to access videotape, requirements for compulsory signage, mandatory compliance with a model code of practice, the right of the ACT Government to appoint an inspector to investigate any scheme and mandatory external evaluation on an annual basis. Those breaching the provisions of the legislation were to be subject to criminal sanctions, with maximum penalties of a \$5000 fine or 6 months imprisonment. The ACT Attorney-General opposed the Bill on the grounds that it would impose excessive costs on small businesses and that it sought to "criminalize overt and reasonable use of cameras in public places" (ACT Attorney General, 2001). It failed to pass into law.

## Reasons for Installing Open Street CCTV

The most common reason given for installing CCTV in town centres has been to combat loosely defined "antisocial behaviour". In Australia, however, as in Britain, attempts to reduce offending and antisocial behaviour through CCTV have been

inextricably linked to attempts to rejuvenate town centres, stimulate local commerce and attract investment (Coleman & Sim, 1998, 2000; Mackay, 2003; Martin, 2000; Reeve, 1998). The need to attract investment and visitors and arrest decline is articulated in the Perth CCTV Information Kit. It gives the following background to the system:

The Central Business District was suffering a retail decline in the mid 1980s and the best efforts of the Council to rejuvenate the area were often offset by emotional stories in the media which generated an undesirable image of the city (City of Perth, 2000, p. 1).

The promise of open street CCTV is that creating a safer environment will lead to an increase in visitors to retail areas and a subsequent boost for trade. This has not always proven true. In one British survey, retailers did not believe open street CCTV schemes had increased either their trade or profit (Brown, 1995, p. 1). Nevertheless business interests, particularly retailers, have been key players in the installation of CCTV throughout Australia. Their involvement ranges from simply offering in principle support for schemes through to full responsibility for funding ongoing operations.

Public support for CCTV is also occurring at the State level. In the lead up to the 1999 Victorian election the then leader of the Labor opposition, Steve Bracks, pledged to boost the number of surveillance cameras in Melbourne as part of a “tough on crime, tough on the causes of crime” platform (*Herald Sun*, April 7, 1999, p. 15). In NSW a promised 5 million dollars towards the funding of CCTV for towns in the west of the State is a key element of the National Party election platform (*Weekend Liberal*, July 20, 2002, p. 3).

Economic and political pressures for CCTV systems can have negative consequences. Once the concept has gained sufficient momentum, alternative community safety measures, particularly social ones, are seldom considered. Councils may then find themselves locked into substantial ongoing expenditures (for monitoring and so on). This may be no great problem for wealthier municipalities such as Melbourne or Sydney, but can represent a considerable burden for smaller regional centres. Finally, once commitment has been made there is a tendency for those with an investment in a system to make grandiose claims about its likely and actual achievements.

## **Researching the Installation of CCTV**

Both the NSW and Queensland guidelines recommend that research into the viability of CCTV be conducted prior to the approval of any system. Such research can help avoid “knee jerk” installation of CCTV following a sensational incident. It can also help identify alternative, possibly more cost-effective, prevention measures. However, thorough pre-installation research has not generally been the case in Australia — although most local authorities have undertaken some assessment of CCTV in other locations. It is interesting to note that where feasibility studies have been undertaken, CCTV has not always been pursued. In Manly for example, a feasibility study recommended that security cameras would be an inappropriate response to problems of alcohol-related violence (Manly Council, 2000).



The most frequent relevant studies, however, can be termed “installation research”. This is where it has already been decided that CCTV will be implemented and studies are undertaken to ascertain appropriate technology and operating procedures. Security consultants have in some locations undertaken this work.

### **Community Consultation**

Both NSW and Queensland CCTV guidelines recommend public consultation prior to the installation of an open street CCTV system. The NSW Guidelines suggest that community consultation assists in ensuring systems are designed to meet local needs and will promote continuing support (Crime Prevention Division, 2000, p. 10). One mechanism for achieving community consultation, adopted by some local authorities, is to assemble a CCTV steering group with appropriate representation. However, there are other methods. These include leaflet distribution, public meetings, media notices and making plans and studies publicly available for comment.

Community consultation has not to date been widely undertaken in Australia, although it has been far more common for recently established systems. With most major capital city systems — Perth, Adelaide, Brisbane and Melbourne — no broad process of consultation preceded installation. Both Sydney and Melbourne conducted limited consultation with civil liberties representatives rather than the broader community. Civil liberties organisations may raise specific concerns. However, other community issues will not necessarily be articulated by civil libertarians.

### **Managing CCTV systems**

All managers participating in this research confirmed that the ongoing administration of CCTV is both complex and time consuming. CCTV programs bring with them substantial responsibilities for contract management and design, staff supervision and routine administration (such as tracking and releasing videotape as evidence), in addition to the ongoing task of cultivating and maintaining partnerships with stakeholders. Such work is particularly labour intensive.

The complexity of CCTV management structures varied across systems, depending on the size and resources of respective councils. Larger authorities such as Sydney, Brisbane and Melbourne have structures that separate policy and development from day-to-day system operation. System managers reported that time officially allocated to managing camera programs was only a fraction of their overall duties, but that this was an area that kept “growing and growing”. Such significant growth in management responsibilities had seldom been anticipated.

### **Ensuring Public Awareness and Accountability**

Accountability for the operation of open street CCTV systems should be encouraged. As the UK Data Protection Commissioner points out, “public confidence has to be earned and maintained” (2000, p. 3). In Australia, the main relevant mechanisms are voluntary codes of practice: there is no direct legislation covering public CCTV surveillance. Of the 22 councils participating in in-depth interviews for this study, only two did not have a formal code. Adoption of voluntary codes has been

encouraged by the security industry, which has concerns about the impact of statutory regulation (Adams, 1996, 1997). "Operating Procedures" are also widely used to provide detailed instructions to control room staff and regulate program operation and the release of visual material from programs.

The 1996 UK Model Code recommends that codes of practice be made available to the public (Kitchen, 1996, p. 32). Both the City of Sydney (2001) and Lismore City Council (2001) have taken this approach. It would be helpful if it became more widespread. The community has a right to know how a system is being operated, not merely that it exists or how many cameras there are. There would seem to be no compelling argument for a code to be confidential.

Audit committees are another important accountability mechanism. These have been established in Sydney, Melbourne, Canberra, Fairfield and Dubbo. An audit committee's objective is to provide a mechanism of accountability and external review. In theory it provides reassurance to the public that a system is operated transparently and ethically, and that self-regulatory codes and protocols are being observed.

As State government interest in CCTV grows, it may become feasible for system audits to be undertaken by a State government agency, either the various Privacy Commissioners or the Crime Prevention Divisions of various State Governments. Annual audits would seem sufficient to ensure that procedures and protocols were being adhered to. If subsequent reports were made available to the public this would ensure a level of transparency across open street CCTV systems and provide public assurance that the technology was subject to oversight beyond the local level.

Another possible accountability mechanism is, of course, a workable complaints procedure. These are not common in Australia: in most instances a private individual with a grievance related to CCTV really only has the option of contacting the relevant council. It should be noted, however, that this research did not disclose any record of a complaint received, even where a relevant system did have a complaints procedure. A transparent process is essential to system accountability. One reason few if any complaints are made is that the public lacks access to relevant information.

Ensuring adequate public awareness should be an important consideration for administrators of CCTV, as it can affect both its deterrent effect and its role in reducing fear. Admittedly this relationship is by no means straightforward. Nevertheless, it would seem important enough to warrant regular research into the public's knowledge of the system. There has been some relevant Australian research.

Findings from these studies are reasonably consistent. In Fairfield, Sydney and Melbourne, where CCTV has been introduced along with other initiatives, surveillance cameras have been the most recognised prevention measure (Coumarelos, 2001, p. 22; Swinbourne, 2001, p. 11). In Fairfield and Sydney cameras were found to have a significant impact upon feelings of safety. An evaluation of the Sydney Safe City strategy found 85.4% of those aware of the safety cameras initiative reported it made them feel safer in the CBD (Coumarelos, 2001, p. 22). In Fairfield 61% of those surveyed reported that cameras made them feel safer (Swinbourne, 2001, p. 12). Results from KPMG research conducted for the City of Melbourne in 1998 were less conclusive. It found the cameras did not significantly affect public perceptions (Parliament of Victoria, 2001, p. 55).

Where respondents have been asked more generally about initiatives that might enhance their feelings of safety, findings are a little less favourable to CCTV. Both in Sydney and in Melbourne, a more visible police presence and improved lighting were the most commonly suggested initiatives (Coumarelos, 2001, p. 29; Parliament of Victoria, 2001, p. 55). Only 6.9% of Sydney respondents suggested additional cameras (Coumarlos, 2001, p. 29).

If one of the key purposes of CCTV is to enhance feelings of safety, it would seem important that administrators develop strategies to remind the public of the cameras' presence. While the initial phase of CCTV installation attracted media attention in all locations, very few Australian systems have a policy for maintaining ongoing awareness. Guidelines prepared in NSW and Queensland both stress the importance of utilising the media as a means of publicising CCTV schemes.

System administrators tend, however, to be wary about media exposure — feeling that it may have the unwanted side effect of drawing attention to real or perceived crime problems in an area. It was also suggested that the promotion of successes might encourage demands for CCTV in other locations where it was neither necessary nor financially possible. The risk of some negative coverage should not, however, outweigh the important role the print media can play in increasing public awareness, and thereby the effectiveness, of CCTV schemes.

Another way of reminding the public of the presence of cameras is, of course, on-site signs. Signage alerting the public to the presence of video surveillance is widely recommended for open street CCTV systems (for example, in the 1996 UK Model Code of Practice — Kitchin, 1996, p. 35). Such recommendations have now been included in the legally enforceable code of practice issued by the UK Data Protection Commissioner in 2000, although recent research in London by McCahill and Norris (2003, p. 62) suggests a quite low rate of compliance. In Australia, CCTV Guidelines issued by the NSW Attorney-General's Department recommend that local authorities undertaking video surveillance alert the public to the presence of cameras through signage (Crime Prevention Division, 2000, pp. 19–20).

Signage is common in Australian town centre CCTV schemes, but by no means ubiquitous. Of the 33 systems surveyed, 21 had some form of signage while 12 had none at all. All NSW systems have signs, as do the three Victorian ones. However, signage is considerably less common in Queensland (only three out of nine systems have signs) and none of the four Western Australian systems use signs to alert the public to camera surveillance. One local government area had decided against signs as it was considered this might expose authorities to legal action. However, the recommendation of the NSW Guidelines that signs should not imply that CCTV is enhancing public safety or security would seem to militate against this possibility (Crime Prevention Division, 2000, p. 20). On balance, we see signage as a key to ethical operation. The public has a right to know it is being observed and signage also has the positive benefit of increasing public awareness of a system.

### **Is Open Street CCTV Effective?**

Research on CCTV initially focused on the basic question of whether it actually reduced offending. Studies suggest that in well-defined spaces such as shops (Burrows, 1991; Gill & Turbin, 1998; Van Straelen, 1978), buses (Poyner, 1988),

car parks (Poyner, 1991; Tilley, 1993), the London Underground (Burrows, 1979) and sports grounds (Hancox & Morgan, 1975), CCTV can be a useful tool to prevent specific offences. Such results reflect findings for situational crime prevention programs generally, with most success evident when clearly identified problems in specific locations are targeted (Clarke, 1992; White & Sutton, 1995).

Results of research on the impacts of CCTV in more diffuse urban locations have to date been ambiguous. One evaluation on a public housing estate concluded that the technology had no impact on levels of offending (Musheno et al., 1978). Evaluations of larger town centre CCTV schemes have been of variable quality, often conducted in-house by local government authorities (Ditton & Short, 1998). Nevertheless, Britain has seen more systematic evaluations of open street CCTV. Brown's (1995) study of systems in Newcastle upon Tyne, Birmingham and Kings Lynn employed a rigorous methodology based upon Pawson and Tilley's (1994) "realistic evaluation" model. While concluding that there had been a decline in some forms of offending following the introduction of CCTV, Brown cautioned that short-term gains in crime prevention might wear off over time and that displacement effects could undermine perceived advantages.

Ditton and Short's (1998) evaluation in Airdrie also found that the introduction of CCTV had preceded a decline (of 21%) in recorded offending. However, the Airdrie researchers caution that perceived benefits might have been counteracted by displacement, adding that rigorous cost-benefits analysis could further undermine the significance of perceived reductions in crimes committed. Burnley, Armitage et al. (1999) reported an overall fall of 25% in recorded offences, sustained over 2 years. Other findings have been less positive. Brown (1995) found that in Birmingham cameras failed to produce an overall reduction in reported crime, with only a small decline in thefts of motor vehicles. A recent evaluation of CCTV in Glasgow (Ditton et al., 1999) reports that installation of surveillance cameras in the city centre had coincided with an overall increase of 9% in recorded crime. Serious violence, vandalism and motoring offences did, however, decline. Welsh and Farrington's (2002) meta-analysis compared 13 evaluations in city centres and in public housing. Five found a positive effect (decrease in offences) and three an undesirable effect (increase in crime), while in the remaining five evaluations there was no effect or evidence was unclear (Welsh & Farrington, 2002, p. 13). It should be noted, moreover, that attempts to directly link implementation of CCTV to changes in the overall crime rate are problematic. As Tilley (1998) has cautioned, crime rates may be subject to random fluctuations and it would be mistaken to assume a fixed invariant relationship between the introduction of any one measure and either decreases or increases in recorded crime.

As is the case with most situational crime prevention measures, whether crime is prevented by CCTV coverage or is merely displaced to other locations remains contested (Barr & Pease, 1990; Brown, 1995; Ditton & Short, 1999; Gabor, 1990; Skinns 1998). Poyner (1988, 1991) has argued for the dispersal of positive benefits, Ditton and Short (1998, 1999) and Brown (1995) found displacement impossible to measure though difficult to discount, while Skinns' (1998) evaluation maintained there was significant dispersal of criminal activity to adjoining areas following the introduction of CCTV. Short and Ditton (1996), however, found no

evidence of either functional or geographical displacement and no evidence of dispersal of benefits, while Armitage et al. (1999) also found no evidence of displacement and some evidence of diffusion of benefits. In the 13 evaluations of city centre and public housing CCTV overviewed by Welsh and Farrington, more schemes showed evidence of diffusion of benefits than displacement (2002, p. 42). In summary, while opponents of CCTV often suggest an irrefutable link between cameras and displacement the statistical evidence is inconclusive. However, the argument that CCTV will displace crime is difficult to counter, as it can never be proven that displacement has not occurred (Tilley, 1998, p. 143).

Mixed findings in Britain as to the effectiveness of CCTV in preventing crime have led to a reformulation of research questions. Both Tilley (1997, 1998) and Skinnis (1998) recommend methodologies that move beyond reliance on recorded crime statistics. Pawson and Tilley's (1994, 1997) "realistic" evaluation framework, that takes account of context, mechanisms and outcomes of CCTV, is widely considered the most sophisticated evaluation methodology. Brown (1995) and Armitage et al. (1999) have applied principles of realistic evaluation to open street CCTV. Even taking account of the need for realistic evaluation, however, evaluations of open street CCTV continue to return mixed findings (Phillips, 1999; Welsh & Farrington, 2002; Coleman & Norris, 2000).

While most evaluation research has been reliant on crime data, several studies have used alternative data with interesting results. Sivarajasingam and Shepherd (1999) compared hospital accident and emergency admission statistics with police data to assess the impact of CCTV upon urban violence in three Welsh centres. In all cases the hospital data contradicted police data. Mazerolle, Hurley, and Chamlin (2002) analysed video footage using coded categories of pro- and antisocial behaviour to assess the level of behavioural adaptation to CCTV in Cincinnati.

Studies of public perceptions have been controversial. Amateur or politically motivated surveys often have reported overwhelming public support for CCTV (Ditton, 2000; Ditton & Short, 1998). A survey by Honess and Charman (1992) concluded that CCTV was acceptable to the public, although requiring careful controls to ensure rights of privacy were not infringed. However, Honess and Charman's results, and their subsequent use, remain contested (Davies, 1998). Research by Bennett and Gelsthorpe (1996) found public support for CCTV in Cambridge, although this varied across categories of age and gender. Moreover, their study revealed a preference for police presence and street lighting over CCTV as crime prevention initiatives. More recent surveys have demonstrated less public support and mixed opinion across gender and age groups regarding effectiveness (Ditton, 1998, 1999).

There has recently been considerable enthusiasm for the greater use of qualitative data in evaluation research, particularly the study of offender perceptions of CCTV. In 1998, Ditton and Short recommended future evaluations of CCTV should consider offender perceptions. Three studies along these lines have produced interesting (although inconclusive) findings on displacement effects, the preventive capacity of systems and offender adaptation (French, 1996; Gill & Loveday, 2003; Short & Ditton, 1998).

Compared with the UK, Australian research is underdeveloped. Some attention has been given to the broad political, social and practical implications of situational crime prevention (O'Malley, 1994; O'Malley & Sutton, 1997; Sutton, 1994; White & Sutton, 1995). Grabosky (1998) has also considered technological developments on policing and crime control. However, no significant study of public CCTV in Australia yet exists.

State government bodies have carried out limited research. The ACT Parliament Standing Committee on Legal Affairs (1996) reviewed public CCTV systems in the course of an inquiry into the efficacy of surveillance cameras. It reported that the absence of adequate research was a serious impediment to its investigations and recommended [para 6.10.] an Australia-wide review of public CCTV.

Waters (1996a, 1996b), Davies (1995), Gallagher (1997) and Fox (2001) have also discussed the legal and privacy implications of public CCTV surveillance in Australia. Hillier (1997) and Martin (2000) discuss the ramifications of CCTV for the use of public spaces in Perth and Sydney respectively, using theories of urban transformation. Martin and Stubbs (2001) have also completed as yet unpublished research on CCTV operation in two Australian sites. Isnard's (2001) recent paper discusses operational issues and relates these to the potential effectiveness of CCTV in reducing antisocial behaviour. Research in Western Australia is examining the impact of CCTV on perceptions of risk (Brooks & Smith, 2002). To date, only two evaluations of CCTV are publicly available in Australia (Fairfield City Council, 2002; Goodwin, 2002). In light of the funds being committed to open street CCTV implementation and maintenance, there is a clear need for more extensive Australian research and evaluation.

### **Conclusions: The Future of Open Street CCTV**

Open street CCTV systems have expanded remarkably in recent years and there is little reason to assume this trend will be reversed. Relevant technology is decreasing in cost and improving in functionality and CCTV continues to appeal to business and political interests. With systems already established in all Australian capital cities except Darwin, future expansion is likely to be in regional centres and suburban locations. Digital technology is also likely to become the industry standard. Two other trends are worthy of comment: the trend towards system integration and the potential use of pattern recognition software and intelligent scene monitoring.

System integration, both of public schemes and of public and private CCTV, is likely to increase. Initially such developments are likely to involve integration of government surveillance — particularly of rail, roadway and public space. A number of locations already have moved in this direction. Perth's CCTV system also includes vision from the Council's internal security cameras in car parks and in total incorporates some 250 cameras. The Adelaide Control Room receives vision from the rail system cameras of TransAdelaide in addition to pictures from the street-based system. System integration produces economies of scale. During interviews there was considerable enthusiasm for it among system managers. However, this may also signal a move towards what Norris and Armstrong term "total panopticism" (1999, p. 208).

The CCTV industry is also developing and marketing automated systems for incident detection, number plate recognition and the recognition of individuals from pre-existing databases (Norris, Moran, & Armstrong, 1998, p. 257). For administrators, the potential for totally automated surveillance is attractive — it reduces substantial costs associated with human monitoring. Future systems are likely to involve intelligent scene monitoring: computer programs capable of detecting significant changes in the cameras' "field of vision". In Britain such technology is being developed for applications such as the monitoring of bank queues to detect likely hold-up scenarios and crowd situations to warn of potential disorder (Norris, Moran, & Armstrong, 1998, p. 264).

Another potentially significant issue is the application of facial recognition software. Such software is already in use in several Australian locations including Sydney Airport and Melbourne's Crown Casino. These programs use a facial image, measuring characteristics such as the distance between the eyes, length of nose and shape of jaw to create a unique file. This file is then compared with other images held on file. The CSIRO has developed a facial recognition system, SQIS (System for Quick Image Search).<sup>2</sup> Nevertheless, it is generally agreed that the capacity of automated recognition systems to identify individuals in open street environments is still some way from becoming feasible (Norris & Armstrong 1999, p. 216). The "Mandrake" facial recognition system has been in place in Newham, London, since November 1998. It is reported that "reliable hits" are generated in 80% of cases, meaning that in the best-case scenario there is a one in five chance of false identification (Omega Foundation 2000, p. 58). The American Council for Civil Liberties reported even greater unreliability of Visionics Face-IT facial identification software used in the public space CCTV system in Tampa, Florida (Stanley & Steinhardt 2002). Whatever their actual effectiveness, intelligent scene monitoring and facial recognition technology can be attractive to central authorities because they seem to enhance capabilities for systematically observing local populations and intervening against those perceived as "deviant" or "dangerous". It is essential that relevant legislative and procedural codes develop in pace with these technologies, to ensure that power is not abused.

More Australian research is needed on the ways open street CCTV is used and its precise impacts on crime and perceptions of safety. Such research may well prove that CCTV can be effective in reducing the incidence of some types of crime. However, it remains to be established in what locations and under what conditions. Current imperfect knowledge about the effects of CCTV does not justify jettisoning the approach altogether — particularly when one considers that, in the absence of such systems, ordinary citizens may become even more inclined to abandon public space. Rigorous research-backed policy development is needed, however, to ensure that CCTV is used in ways that observe the need for public space to be open and inclusive, as well as safe and secure.

Open street CCTV is controversial because it can have considerable social ramifications. The assertion that "CCTV can enhance public safety and security" is plausible enough. It is quite conceivable that many walking the city streets find constant camera observation reassuring. But as David Lyon maintains, surveillance has two faces (2001, pp. 3–4). If CCTV eliminates risk and danger it also can

interrogate, control and marginalise. CCTV can be a tool that disciplines and constrains, and sharpens social and economic divisions. In this way it is a microcosm of the cultural contradictions of late modernity. In societies that seem inherently risky and unstable — where social and economic relations are free floating and contingent — there is a corresponding impulse to control, segregate, fortify and exclude (Garland, 2001, p. 194). Public surveillance is symptomatic of the central dilemmas of our society: how to maintain the free play of market forces while simultaneously governing and controlling risk. CCTV is intertwined with the march of a global economy that has transformed our urban centres into “brands” and sites of consumption (Bannister, Fyfe, & Kearns, 1998). Those responsible for implementing and managing open street CCTV should not simply conceive their mission in terms of making streets and malls comfortable and risk free. They must also be conscious of all Australians’ rights to use public space.

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### Endnotes

- 1 The research methodology consisted of semi-structured interviews with a total of 34 participants. Participants were predominantly local government representatives, but interviews were also conducted with police in various jurisdictions who regularly interacted with CCTV. An extensive archive of administrative documentation from the various CCTV schemes was also assembled and analysed.
- 2 [www.tip.csiro.au/Services/SmartSensing/FaceRecognition1.htm](http://www.tip.csiro.au/Services/SmartSensing/FaceRecognition1.htm) (accessed April 19, 2002)

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