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Does CCTV displace crime? An evaluation of the evidence and a case study from Amsterdam

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Abstract
Most studies that have tried to assess the amount of displacement caused by CCTV have found that displacement can occur, but that only rarely can complete displacement be observed. The net result has therefore always been positive. An evaluation of three CCTV schemes in Amsterdam confirms these findings.
These schemes showed positive results in the CCTV areas themselves. Police and survey data in and around the areas show that crime decreased, and a slight but significant reduction in fear of crime could be observed in one of the three areas. There were no signs that fear of crime had been displaced to – had become higher in – adjacent areas. A slight decrease in crime in the streets surrounding the CCTV project could be observed. However, there are differences in the degree of displacement of different types of crimes. Assaults, muggings, and thefts from cars increased significantly in the so-called 'probable displacement area'.

Keywords: displacement, crime, incivilities, fear of crime, security cameras, CCTV, Amsterdam

Introduction

The first projects using security cameras – or Closed Circuit TeleVision (CCTV) – in public spaces in the Netherlands date back to 1997. Only six years later in January 2003 more than 80 of the country's 550 municipalities were using CCTV in public places – in entertainment districts, shopping centres, car parks, industrial areas and public transport. CCTV has become a hot issue in the Netherlands. In recent years, more and more Dutch research has been published on the effects of CCTV. Although it is at the forefront of political and public debate on CCTV, one possible effect of CCTV has received relatively little attention in that research: displacement of crime. This paper will focus on displacement by presenting the empirical results of a CCTV evaluation in the city of Amsterdam. But first, this paper looks into some theoretical issues regarding displacement and international research on displacement and CCTV.

Displacement theory

Displacement means that criminal behaviour is continued at a different location or in a different way as a result of preventive measures. In the literature a distinction in made between five types of displacement[2]:

- *Geographical displacement*: the same offence is committed in a different area.
- *Temporal displacement*: offenders commit the same offence, but at a different time, for example during the period when the camera is not running.
- *Tactical displacement*: the way in which the offence is committed (the modus operandi) changes. For example, offenders make sure that they cannot be identified.
- *Target displacement:* criminal behaviour takes on a different target.
- *Crime type displacement*: in this type of displacement, an offender switches from one type of crime to another, which is less easy to recognise on camera.

Combinations of the various types of displacement are also possible.

Research on displacement has consistently shown that the net result of preventive measures is almost always positive: the problem may have been displaced to a certain extent, but this displacement is almost never complete. In the following section, empirical results from several studies looking into displacement caused by CCTV are presented.

The degree in which displacement occurs could well be influenced to a considerable degree by the perceptions of (potential) offenders[3]. If they perceive preventive measures to be limited to a specific area (or specific time, specific object, etc.) there is a high probability of displacement. When, on the other hand, offenders feel that this specific measure is just one of many ways in which the government is clamping down on crime in general, a specific preventive measure like CCTV can contribute to an improvement beyond the area at which the measure was originally targeted. Hence the perceived scope of a preventive measure may be bigger than its objective scope. Some research even shows that preventive measures in one area can have a positive knock-on effect: not only did the situation in the target area improve, but positive effects were also measured in areas outside the target area itself[4].

Displacement probably depends to a considerable degree on the type of offender involved. One useful division in types of offenders is the one between generalists and specialists. Generalists are flexible in their criminal behaviour and will find alternative ways to commit offences when confronted with preventive measures. For example, if there are cameras inside shops, these offenders could switch to street-mugging or car crime. Displacement is therefore likely if the offenders active in an area are generalists. Specialists, on the other hand, are not as flexible because they have a specific skill (e.g. burglary of a certain type of residence, or theft of or from a certain brand of car). Their ability to displace their criminal activities is limited. It may therefore be expected that the introduction of CCTV in a certain area, specifically targeted at protecting the objects they favour, will not lead to displacement but to a decrease of the number of offences they commit. There is no reason to assume *a priori* that the theoretical approach to the problem of displacement in general does not apply to CCTV.

Displacement – international empirical findings

Almost all-international research on crime displacement shows that the net result of the preventive measures taken is positive. Sometimes there is displacement, but it is never complete. The first systematic research on crime displacement was conduced in the nineties. The first studies from Canada[5] and the United States[6] showed that displacement was a much smaller problem than was generally assumed. The most authoritative international study came from the Netherlands[7]. A total of 55 projects

from eight countries, including Great Britain, the United States and the Netherlands, were studied. In 16 studies, no displacement effect was observed and in 33 studies, partial displacement was observed. In six studies, the preventive measures had an effect not only in the project area but also beyond – a positive knock-on effect. The study concluded that displacement is a possibility, but that it is certainly not a natural consequence of crime prevention or crime reduction schemes. Even if displacement occurs, it is never complete. A striking result was that this appeared to be true for all offences. Striking because it was generally assumed that certain offences, for instance drug-dealing, are almost completely autonomous and not to be influenced by preventive measures. Addicts and drug-dealers depend on this type of crime and will therefore find another place, time or way to close the deal. This assumption proved to be untrue; Cromwell[8] showed that addicts take into account the consequences of their actions and are in fact influenced by preventive measures. Other research showed similar findings[9].

Research into crime displacement as a result of CCTV is still quite rare, although some research into CCTV does pay explicit attention to displacement:

- In Birmingham, it appeared that CCTV did not lead to geographical displacement, but that it did lead to functional – or crime type - displacement: mugging and pickpocketing decreased, whereas theft from cars increased[10].
- In Newcastle, no geographical or functional displacement effects were observed. Here, there was even a positive knock-on effect outside the camera area and in particular with respect to vandalism and burglaries[11].
- In Airdrie, indications were found that CCTV led to positive effects in the camera area *and* outside the area[12].
- In the centre of Copenhagen, CCTV led to a decrease of mugging in the group of offenders who were not dependent on the money. Among those who were dependent on the money, mugging increased[13].
- In Doncaster, no displacement was observed. According to the author, the observed increase in the control area is a consequence of 'pre-existing trends'[14].
- In Ilford it was shown that mugging and burglary was displaced from the city centre (where the cameras were located) to the surrounding neighbourhoods[15].
- In Burnley, CCTV had a positive knock-on effect for violent crime and car crime. Burglary did seem to have been displaced[16].
- In Cincinnati, no displacement was found in one of the two projects studied; it was found in the other. In that project there seemed to be a shift in the offenders' activities, 'given the increase in the number of civilian phone calls to the police'[17].
- In Cambridge, where 30 cameras were installed in the centre, crime proved to have dropped, but less than in the surrounding area. The researchers qualified this as an undesired effect of CCTV; the number of reports to the police and crimes logged by the police increased, while surveys showed that the number of offences had not decreased[18].

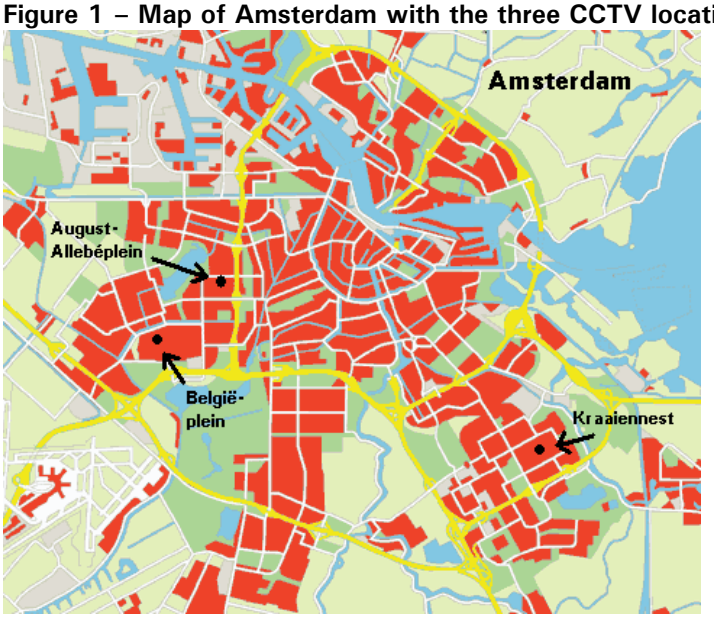
Summarising these results, partial displacement was observed in two cases. In the other cases either there was no displacement at all (two projects), there was a positive knock-on effect outside the camera area as well (two projects), or the results were not clear. All in all, the balance in displacement research specifically focusing on CCTV seems to tend towards positive net results thereby confirming the general theory on displacement. The question whether this conclusion also applies to the CCTV projects in Amsterdam is the central issue in the next section of this paper.

Three CCTV schemes in Amsterdam

In Amsterdam, three experiments with CCTV in public areas are being conducted[19]. One experiment started as early as 1997 (Kraaiennest), one in September 2000 (August Allebéplein) and one in mid-2001 (Belgiëplein). All three areas are medium-sized shopping areas surrounded by houses and apartment buildings. The character of

the three areas differs considerably. The Kraaiennest scheme is located in a part of Amsterdam generally regarded as a problematic area. The other two areas are less problematic, although here too, the level of crime and incivilities is relatively high compared to the average situation in the city.

Figure 1 – Map of Amsterdam with the three CCTV locations



The CCTV scheme in Kraaiennest is not only older than the other two but also larger: here, twenty cameras are operational, the images are recorded permanently and preserved for seven days in order to enable police investigations after crimes have been committed. The monitors are watched live by operators from Monday till Saturday from 8 a.m. until 10:30 p.m. The two other schemes in the western part of Amsterdam are smaller: four (August Allebéplein) and five cameras (Belgiëplein) are operational there. An operator is only present during so-called 'peak hours': Thursday, Friday and Saturday from 3 p.m. until 11 p.m. Images are never recorded here, unless an operator is present and he or she decides it is useful to record the images.

The aims of the three CCTV schemes differ: in the two projects in the West of Amsterdam (August Allebéplein and Belgiëplein), the aim was mainly to do something about loitering youth and, to a lesser degree, end street fights and robberies. The business community in these areas gave a powerful impulse to the introduction of CCTV. The other scheme (Kraaiennest) was mostly targeted at trouble caused by drug trading and drug use. Also, there was a large number of muggings. In an attempt to turn the tables, CCTV was chosen as one of a larger number of preventive measures to be introduced.

Research design

In the beginning of 2001, the city of Amsterdam asked the private research and consultancy bureau DSP-groep to carry out an evaluation of the three experiments then running[20]. The research design consisted of the following four steps:

1. A literature study of national and international research on the effects of CCTV with special focus on displacement effects;

2. An analysis of police records for the year before and the year following the introduction of CCTV in the three different areas. Also, in order to be able to control for large scale trends in recorded crime, police records were analysed for wider areas encompassing the CCTV areas: the police team area (approximately 5,000 inhabitants), the police district (of which there are eight in the city of Amsterdam) and the police region of Amsterdam (with around three-quarters of a million inhabitants). Because the cameras were not installed at the same time, the time periods analysed differ by location. In Kraaiennest and August Allebéplein the research was divided into a 12-month period before and a 12-month period after September 2000. At Belgiëplein, the start of the project was later: therefore, the two periods analysed here were the year preceding and the year following March 2001.

3. A survey conducted in two sweeps one year apart – June 2001 and June 2002[21]. Three groups of users of the areas were interviewed: shopkeepers in the squares (the same people were interviewed in the first and second sweep), inhabitants (minimum of 100 at each location), and visitors (minimum 100 at each location). Overall, 2,000 questionnaires were completed[22];

4. In-depth interviews with police officers, camera operators, policy-makers and others involved in the organisation and deployment of CCTV in the three areas. This part of the research was mostly used to put the other findings into perspective.

The most important research questions to be answered were:

- Does CCTV reduce crime and incivilities (e.g. loitering youth, verbal aggression[23], etc.)?
- Does CCTV make people feel safer?
- Does CCTV displace crime and incivilities?
- Does CCTV lead to a shift in fear of crime or feelings of insecurity from the CCTV areas to other (adjacent) areas?

Because of the attention given to the problem of displacement, it was decided to invest a considerable part of the research budget in this subject. One area was chosen where there were no cameras, but which was likely to become a displacement area. For this, the streets surrounding one of the CCTV-areas, the August Allebéplein, were chosen. This choice was made because of the high displacement risk in this specific area. The streets around August Allebéplein share some important characteristics with the square itself: there are shops in both locations and the areas are similar in many other respects. The selected ‘probable displacement area’ is next to August Allebéplein: it was envisaged that offenders would shift their activities 'round the corner' without too much trouble. In fact, immediately after installation of the cameras on the square, there was the feeling among some residents, politicians and police officers that car-thefts were displaced from the square itself to the other side of an apartment building located on one side of the square. Therefore, if displacement did occur, it would probably occur here, making it an ideal area to test the displacement hypothesis. To do this, exactly the same research activities were undertaken in the streets surrounding August Allebéplein: two sweeps of surveys among inhabitants, visitors and local shopkeepers, an analysis of police records and in-depth interviews with local officials and police officers[24].

Of course, it would have been even better if this 'extra' research could also have been carried out in the two other areas, but there was no budget for that option. However, police records were also analysed for the surroundings of the other two CCTV areas. Also, some extra questions were asked in the surveys among residents and visitors to assess the amount of displacement experienced or observed by them.

So, albeit indirectly, for these two other areas an indication of the amount of displacement can also be given.

Reduction of crime and incivilities

Though the rest of this paper will mainly focus on displacement, a summary of the general effect of the schemes may be of some interest too.

Police data:
Though not very reliable due to the fact that a lot of crime goes unrecorded, the police figures for five types of crime (street robbery, assault, hold-up, burglary and car crime) show a decrease in the three CCTV areas taken together from 436 a year to 362 a year (a drop of 74), while the figures for the surrounding police team area, police district and the whole Amsterdam police region show a rising or more or less constant trend.[25]

Survey data:
The surveys among residents of the CCTV areas show a marked decrease in incidents of 23% as shown in table 1.

[table 1]

Reduction of fear of crime

The vast majority of residents does occasionally feel unsafe in all three areas investigated. This was shown in the 2001 survey as well as in the 2002 survey. The proportion of residents indicating they felt unsafe once in a while in 'their' CCTV area was roughly three in four (Belgiëplein and Kraaiennest), but rose to 91% (August Allebéplein, 2001 sweep). No significant improvement between the 2001 and 2002 surveys was found, except on August Allebéplein, where the percentage of residents feeling unsafe decreased from 91 to 82 per cent during the year. So, as far as feelings of insecurity are concerned, a slight improvement could be observed in only one of the three CCTV areas.

Displacement of fear of crime

The Amsterdam research on CCTV focused strongly on the displacement of crime and incivilities, as well as fear of crime. This was largely due to the fact that local authorities and policy-makers think or say that cameras "won't help a bit because crime will simply be displaced round the corner". To test this displacement hypothesis, extra research was done in one of the three CCTV areas: August Allebéplein in the western part of Amsterdam. Next to this square a 'probable displacement area' was identified, which had very similar characteristics to the square itself: two streets with residential building with shops facing the street.
Table 2 shows the results for August Allebéplein (the CCTV area) and the surrounding streets (the 'probable displacement area'). Though no extra displacement area surveys could be held next to the other two CCTV areas (Belgiëplein and Kraaiennest) a rough indication of displacement was available since these residents were not only asked how safe they felt in their own (CCTV) area, but also how safe they felt in the streets surrounding 'their' CCTV area. So for Belgiëplein and Kraaiennest, the scores presented in table 2 could be called 'indirect' measures as opposed to the 'direct' measures that are available for August Allebéplein and its neighbourhood.

[Table 2]

As mentioned before, a significant improvement in the levels of fear was found in the CCTV area of August Allebéplein where the percentage of residents feeling unsafe decreased from 91 to 82 per cent (see table 2: -9%). This improvement has not led to

an increase of feelings of insecurity in the area surrounding August Allebéplein (the 'probable displacement area'). Here, the surveys show nearly no change: the percentage of residents feeling unsafe decreased from 81 to 80 per cent (-1%). In the other two areas the effects are very limited in the CCTV areas as well as in the surrounding areas. All in all there are no signs that feelings of insecurity have been displaced.

Displacement of crime and incivilities

At August Allebéplein, the surveys among inhabitants showed that the number of crimes and incivilities in the CCTV area itself had fallen substantially between the 2001 and 2002 surveys. The total number of crimes and incivilities dropped from 230 incidents in the 2001 survey to 154 incidents the following year. In the 'probable displacement area' around the CCTV area the number of crimes and incivilities also dropped but by far less: from 103 in 2001 to 97 in 2002. Table 3 shows the results in more detail.

[Table 3]

Table 3 shows that the improvement is not equally distributed over all offences. Statistically significant results are found for verbal aggression (-12%), bicycle theft (-8%) and the group of 'other offences' (-10%). In the displacement area, the total number of crimes and incivilities also fell, albeit less spectacularly, by six per cent. However, three types of crime seem to have increased here: mugging (+8%), theft from cars (+7%) and assault (+6%). In the CCTV area itself, these crimes did not show a significant change; they either fell (theft from cars and assault) or stayed nearly constant (mugging). This suggests that these three types of crime might have been displaced.

For other types of crime and incivilities, positive effects can be signalled in the displacement area. A statistically significant improvement was found for 'other crimes' (-9%). Two types of crime suggest a positive development (verbal aggression and trouble caused by groups of youngsters; both -9%). Looking at these three crimes and incivilities, a decrease (sometimes statistically significant, sometimes not) can be observed in the CCTV area, indicating a positive knock-on effect.

Experts on CCTV

The possibility of displacement was also a topic in the in-depth interviews held with experts in the CCTV areas: police officers, city council officials, the business community etc. Some of them were of the opinion that there was displacement, albeit partial, of crime and incivilities. They pointed mostly to loitering youth: after the introduction of CCTV these youngsters reportedly moved from the CCTV area in the middle of the square to the edges, into the doorways of houses and flats. This, in turn, has led to more minor confrontations between residents and youngsters. This has had a positive effect on their behaviour. When asked about more serious crimes such as car crime, muggings and bicycle theft, most experts seem to agree that there has been a partial displacement as well. However, these impressions were not supported by police and survey data.

One effect of CCTV has been the demand for more CCTV in other squares and streets. Officials hesitate to take this road, because there may be other, less expensive, measures to tackle specific crime problems. Increasing CCTV schemes in problem areas could set in motion an almost insatiable appetite for ever more cameras among inhabitants of problem areas, shopkeepers and the public in general.

Conclusion

Most studies that have tried to assess the amount of displacement caused by CCTV have found that displacement can occur, but that only seldom can complete

displacement be observed. The net result has therefore always been positive. Our research in Amsterdam confirms these findings: some crimes may have been displaced, but the net result was positive: the total number of crimes committed in the CCTV area fell, and there was also a slight decrease in the streets surrounding the CCTV project. However, a clear difference between different types of crimes was shown. Assaults, muggings, and thefts from cars increased significantly in the so-called 'probable displacement area'. On the other hand, there are some types of crimes or incivilities where a positive knock-on effect was indicated. Statistically speaking, this can only be concluded for the category 'other offences', but with a little less statistical rigour, the same pattern is visible for trouble caused by groups of youngsters, verbal aggression, and bicycle theft. The percentage of victims of these types of crime decreased in the CCTV area itself, but also in the surrounding streets. But again, these last three findings are not statistically significant, so it is risky to draw firm conclusions. In that respect the same goes for the police figures presented in this paper.

Next to the number of crimes, attention was also paid to fear of crime or feelings of insecurity. It appears that CCTV had little effect on this subjective side of safety, although there was one exception: August Allebéplein. Here, a decrease in the number of people feeling unsafe could be observed. In the area surrounding the CCTV area (the 'probable displacement area') no increase was observed, indicating that there was no displacement.

It is not the first time that displacement research shows that displacement is a potential, but not unavoidable, effect of preventive action and crime reduction schemes. In none of the studies mentioned in this paper was complete displacement observed. On the contrary: in a considerable number of cases there seemed to be a positive knock-on effect beyond the actual area where CCTV is operational.

All in all, it seems justified to conclude that CCTV does not always lead to displacement of crime and incivilities. Based on a theoretical view of offenders, we believe that the key to a successful CCTV project lies in changing the perceptions of offenders. When they become convinced that their criminal or troublemaking behaviour is no longer tolerated – either in the CCTV area, or elsewhere – it is most likely that they will adjust their behaviour. If we are correct in assuming that the success of CCTV depends to a considerable degree on the perceived scope of the measure, it would be advisable to invest more in this perceptive aspect of CCTV projects. For instance, pessimistic or fatalistic remarks from police and/or policy-makers implementing another CCTV project ("We're doing the best we can but the offenders will probably just move to the next street") do not contribute to a change in mentality among offenders. In order for preventive measures such as CCTV to be effective in tackling crime and incivilities, it is important that actions are part of a coordinated approach to changing attitudes towards crime. The actual installation of cameras is just one part of this procedure. After all, a camera itself is not much more than a box of electronics with a lens and a wire attached to it. Only when all stakeholders involved (local council, public prosecutor, police, shop owners/keepers, housing associations, private security guards, etc.) work together in a well orchestrated partnership, and CCTV is thus part of a package of measures, can positive effects be achieved, both within and outside the camera area.

Table 1:

Type of crime and incivilities: victim percentage among residents in all three CCTV areas

	2001	*2002*	Change
Mugging	5%	*7%*	+ 2%
Burglary	4%	*6%*	+ 2%
Pickpocketing	5%	*4%*	- 1%
Theft from car	16%	*15%*	- 1%
Assault	8%	*6%*	- 2%
Bicycle theft	8%	*5%*	- 3% *
Trouble caused by groups of youngsters	28%	*23%*	- 5%
Verbal aggression	25%	*18%*	- 7% **
Other offences/incivilities	11%	*4%*	- 7% ***
Total number of crimes/incivilities (absolute)	438	*362*	-23%
Number of respondents (absolute)	397	*413*	

Significance level:
* $p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Table 2

Fear of crime –change in the percentage of residents that is sometimes afraid of crime on the street in the CCTV area and in the streets around that area. Source: survey in two sweeps among residents of the three CCTV areas and the 'probable displacement area' area surrounding August Allebéplein.

	CCTV area			surrounding area		
	2001	*2002*	change	2001	*2002*	change
August Allebéplein	91	*82*	- 9 % **	81	*80*	- 1 %
Belgiëplein	77	*76*	- 1 %	63	*64*	+ 1 %
Kraaiennest	78	*82*	+ 4 %	89	*85*	- 4 %

Significance level: ** $p < 0.05$

See footnote 22 for the number of respondents in each sweep and at each location.
At August Allebéplein, surveys were conducted among residents of the CCTV area itself and a separate survey was conducted among residents of the streets around the square (the so-called 'probable displacement area') so in this case the figures result from direct measurement. The question that was put to both groups was how safe they feel in their own street.
At Belgiëplein and Kraaiennest there was only one survey; here the question was asked how safe one felt in the CCTV area as well as in the surrounding area (indirect measurement).

Table 3

Difference in victim rates for nine crimes between first sweep and second sweep at August Allebéplein versus the 'probable displacement area' (the streets immediately next to the square). Source: survey among residents 2001 and 2002.

	August Allebéplein ('CCTV area')			Streets around August Allebéplein ('displacement area')		
	2001	*2002*	change	2001	*2002*	change
Verbal aggression	46%	*34%*	- 12 % *	23%	*15%*	- 9 %
Trouble by groups of youngsters	45%	*36%*	- 9 %	28%	*19%*	- 9 %
Bicycle theft	15%	*7%*	- 8 % **	11%	*8%*	- 4 %
Theft from cars	35%	*27%*	- 7 %	6%	*13%*	+ 7 % *
Assault	9%	*4%*	- 4 %	4%	*10%*	+ 6 % *
Pickpocketing	3%	*3%*	0 %	4%	*7%*	+ 3 %
Mugging	6%	*7%*	+ 1 %	6%	*14%*	+ 8 %
**						
Burglary	5%	*8%*	+ 3 %	9%	*10%*	+ 1 %
Other offences	18%	*8%*	- 10 % **	11%	*3%*	- 9 % **
number of respondents (absolute)	126	113		98	117	

Significance level:
* $p < 0.10$
** $p < 0.05$

[1] DSP-groep (founded in 1984 and formerly known as 'Van Dijk Van Soomeren and Partners') is a privately owned company active in research, consultancy and project/interim management in various fields of expertise such as crime, sports, youth, education, social policy, urban planning, minorities, etc. DSP-groep specialises in quantitative and qualitative research and employs 60 people. DSP-groep works for local, regional, national and European authorities and institutes as well as the private sector. See: http://www.dsp-groep.nl

[2] Felson, M. and Clarke, R.V., *Opportunity Makes the Thief: Practical Theory for Crime Prevention*. Police Research Series Paper 98. London: Home Office Research, Development and Statistics Directorate, 1998.

[3] Clarke R.V. (ed.), *Situational crime prevention; successful case studies*. New York: Harrow and Heston, 1992.

[4] Bennet, T. and Wright, R., *Burglars on Burglary*. Aldershot: Gower Publishing Company Ltd, 1984. And: Hesseling, R.B.P., *Stoppen of verplaatsen? Een literatuuronderzoek over gelegenheidsbeperkende preventie en displacement van criminaliteit*, Arnhem: Gouda Quint (Onderzoek en beleid/ WODC), 1994.

[5] Gabor, T., "Crime Displacement and Situational Prevention: Towards the Development of some Principles". In: *Canadian Journal of Criminology* 32: 41 – 74, 1990.

[6] Eck, J. E., "The Threat of Crime Displacement". In: *Criminal Justice Abstract*, 25: 527 – 546, 1993.

[7] Hesseling, R.B.P., op cit.

[8] Cromwell, et al., *Breaking and entering: an ethnographic analysis of burglary*. Newburry Park: Sage, 1991.

[9] Chenery, S., Holt, J. and Pease, K., *Biting Back II: Reducing Repeat Victimisation in Huddersfield*. Crime Detection and Prevention Paper 82. London: Home Office, 1997 and: Brown, B., *CCTV in Town Centres: Three Case Studies*. Crime Detection and Prevention Series Paper 68. London: Home Office, 1995.

[10] Brown, B., *CCTV in Town Centres: Three Case Studies*. Crime Detection and Prevention Series Paper 68. London: Home Office, 1995.

[11] Brown, B. op cit.

[12] Short, E. and Ditton, J., *Does CCTV prevent crime? An evaluation of the use of CCTV surveillance cameras in Airdrie town centre*. Edinburgh: Scottish Office, 1995.

[13] Carstensen, N. and Birkholm Frederiksen, K., "Situational Crime Prevention". In Ravn L. (ed.) *Kriminalistisk Arbog*, Copenhagen: Criminal Procedure Institute, 1997.

[14] Skinns, D., "Crime reduction, diffusion and displacement: Evaluating the effectiveness of CCTV". In: Norris, C., Moran, J. and Armstrong, G. (eds), *Surveillance, CCTV and Social Control*. Aldershot: Ashgate, 1998.

[15] Squires, P., *An Evaluation of the Ilford Town Centre CCTV Scheme*, University of Brighton, 1998.

[16] Armitage, R., Smyth, G. and Pease. K., "Burnley CCTV evaluation". In: Painter, K. and Tilley, N. (eds.), *Surveillance of Public Space: CCTV, Street Lighting and Crime Prevention*, 1999.

[17] Mazerolle, L., Hurley, D.C. and Chamlin, M., *Social behavior in public space: An analysis of behavioral adaptations to CCTV*. Griffith University, 2000.

[18] Farrington, D.P., Bennett, T.H. and Welsh, B.C., *Rigorous Evaluations of the Effects of CCTV on Crime.* Unpublished manuscript. Cambridge: Institute of Criminology, University of Cambridge, 2002.

[19] In the summer of 2003 CCTV will also be introduced in a notorious part of the old city centre: the Red Light District with its drug trading, drug use and prostitution. Because the research design with two sweeps of surveys will be used here as well, results from that evaluation will not be available until 2005.

[20] Flight, S. and Van Heerwaarden, Y. (DSP-groep), *Evaluatie cameratoezicht Amsterdam: effectmeting August Allebéplein, Belgiëplein en Kraaiennest*. Amsterdam, 2003.

[21] In Kraaiennest (start of CCTV scheme 1997) and at August Allebéplein the first sweep of surveys (June 2001) was conducted after the cameras were installed. In the case of August Allebéplein the surveys were conducted a few months after the CCTV installation. Therefore, in these two areas, the first sweep of surveys cannot be regarded as a proper pre-measurement. Given the possibility that CCTV has its biggest effects in the first weeks after installation, the results for these two areas have to be interpreted with great care.

[22] The number of respondents (inhabitants only) per sweep per location:

August Allebéplein first sweep	126
August Allebéplein second sweep	113
August Allebéplein displacement first sweep	98
August Allebéplein displacement second sweep	117
Belgiëplein first sweep	175
Belgiëplein second sweep	179
Kraaiennest first sweep	96
Kraaiennest second sweep	121

[23] 'Incivilities' is a concept introduced by Skogan, W.G. and Maxfield, M.G., Coping with crime, individual and neighbourhood reactions, Sage, 1981. In the surveys in Amsterdam this concept was defined as 'verbal agression' and 'trouble caused by groups of youngsters'.

[24] Note that this square was selected because its high probability of displacement. Therefore, the results cannot be generalised to the two other locations, let alone to CCTV schemes in general.

[25] Note the figures for the scheme starting later (Belgiëplein) show a slightly different pattern because by that time the crime trend in the Amsterdam police region, the western police district and the police team area was falling, while the number of recorded crimes in the CCTV area increased slightly (from 76 the year before to 84 the year after: + 8).

Links on CCTV Europe/world wide: http://www.e-doca.net/links.htm
Links on CCTV in the Netherlands: http://www.e-doca.net/Countries/Europe/Netherlands/Netherlands.htm