Volume 6 (4): 361–381: 1477-3708
DOI: 10.1177/1477370809104687

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European Journal of Criminology

The Effects of 'Alley-Gating' in an English Town

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ABSTRACT

Terraced housing is particularly vulnerable to burglary where the offender gains access from the rear of the premises. 'Alley-gating' attempts to prevent this by fitting robust gates across alleyway access points and is currently used in Oldham, North West England. This study evaluates its effectiveness at preventing burglary via statistical and geographic information system (GIS) analysis of crime data from alley-gate treatment sites in Oldham. Focus group data also identify secondary effects beyond crime reduction not apparent from the quantitative analyses. We argue that clearer understanding of the contextual dynamics specific to the gated area, together with careful analytical work and use of computerized crime mapping programmes, can inform strategic decision-making and further reduce victimization.

KEY WORDS

Alley-Gating / Burglary / Crime Analysis / GIS / Situational Crime Prevention.

Introduction

Parallel rows of back-to-back terraced houses with a shared rear alleyway are common in Britain's industrial towns. Such housing is especially vulnerable to burglary (Budd 1999). Alleyways afford easy and unobserved access to these properties (Clarke 2004; Home Office 2006). One frequent crime

reduction strategy involves the restriction of alleyway access by installing gates, commonly termed 'alley-gating'. These gates span alley entry points and keys are issued to scheme residents. Alley-gating is now prevalent in many urban residential areas (Armitage and Smithson 2007; Landman 2003).

Situational crime prevention (SCP) in building design and layout has a long history, from *Defensible Space* (Newman 1972) to design standards promulgated through the 'Secured by Design' scheme (Armitage 2000). Generally known as Crime Prevention Through Environmental Design (CPTED), it concentrates on changes to the physical environment (Crowe 2000; Jeffery 1971), specifically manipulating environmental characteristics in order to prevent criminal opportunity (see, for example, Brantingham and Brantingham 1983, 1991; Brantingham and Faust 1976).

Under Rational Choice theory (see Clarke 2005), offenders deliberately minimize their chance of being caught by acting when guardianship levels are at their lowest and targets at their most vulnerable. For example, during daylight hours burglars assail properties with better cover, such as shrubbery, that keeps them from being observed, whereas in darkness they switch to terraced properties (Coupe and Blake 2006). Collectively, these frameworks suggest that alley-gating could reduce property vulnerability and deter potential offenders.

Displacement and diffusion of benefits are related issues. Preventing crime in one location could move it elsewhere. This displacement hypothesis (Reppetto 1976), long prominent in the literature, does not always mean that the same crime occurs in another location, although such *spatial displacement* is perhaps the most widely feared because it can exaggerate the success of any intervention if not accounted for (Ekblom and Pease 1995). Likewise, a *diffusion of benefits* has been replicated across several studies (Weisburd et al. 2006). Here, the beneficial effects of an intervention extend beyond the target area. For example, efforts to prevent burglary in a residential area can also curtail it in adjacent areas. These divergent spatial possibilities make clear that the effects of an intervention on the surrounding area should be taken into consideration.

Yet, there are other types of displacement. *Temporal displacement* shifts criminal events from one time-point to another. Here, a burglar may switch from mornings to afternoons because of increased morning police patrols. Conversely, *tactical displacement* refers to offenders adapting their approach to crime. Thus, rather than burgling via forcible entry, offenders may con their way in using seemingly legitimate means, distract the occupant and steal property while the owner is thus diverted. These displacement types[1] effectively illustrate how crime prevention approaches must be well

[1] Although there are others (target, perpetrator), these are the most directly salient.

informed, requiring an in-depth understanding of the specific crime problem and what is actually occurring (Eck et al. 1997).

Cost analyses suggest that each burglary typically costs £2,626 (Dubourg et al. 2005). If this estimate holds, burglary currently costs England and Wales £1.9 billion annually. In 1999, the government allocated £25 million to the three-year Reducing Burglary Initiative (RBI) across 63 Strategic Development Projects. A number employed alley-gating (Johnson and Loxley 2001). As a quick and tangible measure, alley-gates neutralize political pressure to show that government funds are well spent (Tonry and Farrington 1995). Thus, alley-gating rapidly gained popularity, with the government publishing installation guidelines and many local authorities funding or installing them free.

In 2004, Operation Gate-it was launched with £1.2 million allocated for alley-gating schemes across England and Wales (Home Office 2006). Despite growing interest, limited empirical research evaluates alley-gating effectiveness (see Johnson and Loxley 2001; Young et al. 2003; Young 1999). Two noteworthy empirical evaluations exist. The first uses a quasi-experimental design to evaluate 3178 alley-gates in Liverpool via quantitative analysis of police-recorded burglaries (Bowers et al. 2004). It reports a 37 percent reduction in burglaries after installation, strong diffusion of benefits and limited displacement (800–1200 metres). Cost/benefit analyses further show a return of £1.86 for every £1.00 spent on gating within 12 months of installation. The second study addresses non-quantitative effects such as improved relationships between neighbours or reduction in anxiety levels via a series of pre/post-installation structured interview questionnaires from Cadoxton, Barry, in South Wales (Rogers 2007). Three questionnaire waves, issued randomly to 100 residents of the gated area, took place: prior to gate installation, and six months and two years after. After six months, 21 percent of respondents believed crime had fallen whereas the remainder felt it had not changed or had increased or did not know. This may be because, although the burglary rate there was relatively low, antisocial behaviour was an issue. If problems occurred in alleys, closure might displace them to the front where they would be more noticeable. In fact, the results show a perceived increase in antisocial behaviour shortly following installation. Two years later, 52 percent of respondents perceived that crime had fallen, suggesting that this hypothesized effect of antisocial behaviour was transient.

These studies suggest that alley-gating has been an effective crime prevention measure in two different places, reducing the incidence of burglary and qualitatively changing resident perceptions. The research reported here employs both quantitative and qualitative methods at a third site to assess

whether these findings hold there or if additional location-based factors influence alley-gate effectiveness.

The present study

The design is multi-stage. First, a quantitative retrospective quasi-experimental design was used.[2] Second, the different displacement types were measured via a combination of geographic information system (GIS) and statistical analyses. Finally, we employed a focus group to gather qualitative information about impact. Together, these methods provide a more rounded approach to alley-gate evaluation than accomplished in the studies noted above. At the commencement of this research, Oldham had 766 alley-gates installed. The quantitative analyses rely primarily on burglary data derived from police reports and an electronic file containing information about the location and features of the installed alley-gates.

Burglary data

We selected burglary because Oldham alley-gating was primarily intended to reduce it.[3] Moreover, British Crime Survey (BCS) results indicate that 89 percent of burglaries are reported to the police, compared with, for example, only 31 percent of incidents of vandalism, suggesting that police-recorded data on burglaries would present a more accurate picture of reality than data on vandalism (Walker et al. 2006).[4] We use the complete two years of burglary data (from 31 August 2005 through 31 August 2007) authorized by the Greater Manchester Police for these analyses. Unlike

[2] This cannot claim the rigour of a true experimental design (Sherman et al. 1997), but randomized allocation is rarely feasible in a crime prevention context (Farrington et al. 2002), thus making retrospective quasi-experimental designs commonplace for evaluation studies (Bowers et al. 2004).

[3] Alley-gating also targets nuisance crime and antisocial behaviour, but these have notoriously low reporting rates. Thus, using police-recorded data for these issues would produce a skewed picture of how alley-gating affects the victims.

[4] A distinction is made between attempted and completed burglaries because attempted incidents are reported to the police much less frequently (Walker et al. 2006). Although their inclusion may introduce a level of bias to the findings, deliberately excluding them would paint a misleading picture as well. For example, under the concept of crime-specific scripts (Cornish 1994), it could well be that, with an alley-gate blocking the preferred means of burglarizing, a second-rate option, which is less likely of success, would be taken. Thus, there might be an increase in failed (or attempted) burglaries after installation. However, analyses show that there is no significant difference in pre- and post-installation occurrence between burglaries and attempted burglaries ($\chi^2 = .874$, $p = .35$). As with completed burglaries, there are significantly fewer attempted burglaries after installation compared with before installation ($\chi^2 = 23.82$, $p = .00$), refuting the script hypothesis.

the data employed by Bowers et al. (2004), which contain only domestic burglaries, these data include both domestic and non-domestic burglaries. This provides a more complete picture of impact since thefts from a garden shed or detached garage are recorded as non-domestic, even though they are protected by alley-gates. Moreover, since non-dwelling burglaries represent a considerable proportion of all Oldham-recorded burglaries (4325 dwelling and 3527 non-dwelling burglaries), excluding them would be methodologically unsound, particularly since some businesses have alley-gates.[5]

Each burglary's precise location, time[6] and date of occurrence, modus operandi and point of entry are captured in the police-recorded burglary data. Table 1 provides their frequencies. Owing to missing address and location data, 1659 cases were unusable, leaving 6193 analysable cases.[7]

Alley-gate data

The Oldham Crime and Disorder Reduction Partnership provided precise data on the 766 fully installed alley-gate locations. Information from this partnership as well as preliminary geographical mapping of data from the 6193-case file indicates that burglary hotspots do not coincide with alley-gate installations. Oldham alley-gates were installed as funding became available *and* once consent from the affected residents was secured. Notably, until 1 April 2006 when gating amendments to the Highways Act of 1980 came into force (giving local councils authority to issue a 'gating order' after demonstrating that a particular right of way persistently facilitated crime and antisocial behaviour), lack of consent from any of the affected properties would preclude gate installation at a particular site. This, paired

[5] Hospitals and schools are not covered by Oldham gates. However, burglaries committed at them could evidence displacement, further demonstrating the importance of their inclusion. Unfortunately, there is no link available in the data concerning the building codes of the properties.

[6] Unfortunately, there is often no way for police to differentiate between time of occurrence and time of discovery. This is because residents are usually not present when the burglary occurs and, in the absence of witnesses or other specific indicators (e.g. a tripped alarm), it is difficult to firmly establish exactly when the crime occurred. As a result, the measures, when both are present, are often identical. This raises the possibility that many of the recorded crimes might have actually occurred earlier than indicated in the data. However, such 'discovery bias' should, theoretically, be present regardless of the time frame or the presence of an alley-gate, lessening this as a potential validity threat.

[7] Although some might argue that this loss of cases is either unjustifiable or renders the quantitative analyses moot, we do not agree. Simply, proximity of any given crime to alley-gates must be available in order to evaluate any effect such gates might have on burglary incidence. Burglaries without location information simply cannot be categorized in terms of this key factor (nor their values imputed), making their exclusion the only proper analytic procedure for the current research question.

Table 1 Frequencies of key characteristics of burglary incidents

Variable	*Category*	*Frequency*	*Percent*
Crimes at alley-gate locations		120	
Crime occurrence	Before installation	89	74.2
	After installation	31	25.8
Range of time burglary occurred	Morning	28	23.3
	Afternoon	13	10.8
	Evening	31	25.8
	Night	48	40.1
Point of entry	Front	41	34.2
	Rear	68	56.6
	Side	5	4.2
	Unknown	1	0.8
	Other	5	4.2
Day occurred (discovered)	Monday	13	10.8
	Tuesday	16	13.4
	Wednesday	15	12.5
	Thursday	20	16.7
	Friday	28	23.3
	Saturday	19	15.8
	Sunday	9	7.5

with time-sensitive funding, resulted in somewhat haphazard installations across Oldham.

In total, 596 alley-gate schemes were installed between August 2005 and August 2007. The two-year crime and alley-gate files were merged by linking the crime address to any address range where an alley-gate was present. There were 475 burglaries at 150 gated locations. Using this merged file, we calculated the number of days between installation and crime, yielding a standardized indicator of temporal distance between crime and installation with both positive and negative values. For example, if a crime occurred 175 days prior to alley-gate installation, the value is '–175'. If it occurred 220 days after, it is '220'. Zero indicates installation day. This variable is skewed, with a mean score of –111 indicating that most burglaries occurred before gate installation, provisionally suggesting that gating reduces burglaries.

To provide a robust before/after comparison, we further constrained the two-year sample to only the 164 gates installed between 28 February 2006 and 28 February 2007. This ensures a minimum six-month window of crime data on either side of installation and results in 120 crimes at 30 alley-gate locations. Because not all 164 gates were installed on 28 February 2006,

Table 2 Distribution of burglaries by month

	Frequency	*Percent*
February	10	8.3
March	19	15.8
April	6	5.0
May	12	10.0
June	4	3.3
July	6	5.0
August	9	7.5
September	10	8.3
October	18	15.0
November	8	6.7
December	6	5.0
January	12	10.0

the time measured before and after gating cannot reliably be standardized. Specifically, alley-gates installed on 28 February 2006 would wield 18 months of influence whereas those installed on 28 February 2007 would wield only 6 months.

This span, however, raises the possibility of seasonal distortion since burglary commission patterns may differ from August to February and February to August. To further investigate this, we examined the installation date distribution for those 12 months. Notably, 39 gates were installed between February and July (32.5 percent), 39 (32.5 percent) in August or September and the remaining 42 (35 percent) between October and February. Thus, there is a roughly even distribution of alley-gate locations with a year (or more) of post-gate data and pre-gate data as well as with approximately a year on either side. Moreover, the monthly burglary distribution shown in Table 2 does not indicate the typical seasonal pattern (Semmens et al. 2002), suggesting minimal seasonal bias in the final results (although caution should still be used in interpreting the results).

Findings

From the temporal distance variable described above, a dichotomous indicator was created to show whether the burglary occurred before or after installation. This enables comparison of pre-gate burglary occurrence with post-gate levels. Of the 120 crimes, 74 percent (89) occurred before gating and 26 percent (31) occurred after gating. A chi-squared test ($\chi^2 = 28.03$,

df 1) indicates that alley-gates significantly ($p < .01$) reduced the risk of burglary to the residences they protect.[8] A few locations had no burglaries before gating, but experienced them after. One such case is examined further through qualitative research.

Displacement effects

Temporal displacement

We assess temporal displacement via changes to the timing of burglaries before versus after gating by examining changes to the days of the week and time of day when burglaries occurred.

To assess the impact of weekday, a Kruskal–Wallis ANOVA test was run on both the 475-case and the 120-case data files. In both instances, there were no significant differences before and after alley-gating (hence no evidence of temporal displacement at the weekday level), even when day of the week was collapsed into weekends and weekdays.

We then examined differences in the time of day when burglaries occurred. Here, the 24-hour day was split into four categories: morning (06:00–11:59), afternoon (12:00–17:59), evening (18:00–23:59) and night (00:00–05:59). Table 3 shows a cross-tabulation of the pre- and post-gating burglaries by time of day for the 120-case file. A Kruskal–Wallis ANOVA reveals a chi-square of 8.37 with a *p*-value of .039, indicating that time of day displacement had occurred after alley-gating. The results show that burglary occurrence during the afternoon and at night was significantly reduced after

Table 3 Cross-tabulation of burglary time ranges pre/post installation

	Time range				
	Morning	*Afternoon*	*Evening*	*Night*	*Total*
Before	18 (20.2%)	12 (13.5%)	19 (21.3%)	40 (45%)	89 (100%)
After	10 (32.2%)	1 (3.1%)	12 (38.7%)	8 (26%)	31 (100%)
Total	28	13	31	48	120

$\chi^2 = 8.37$; $p = .039$

[8] The same analysis on all burglaries (475) occurring at alley-gate locations (150) also yielded significant results ($p < .05$).

gate installation.[9] However, when the same test was conducted on the 475-case data file,[10] no such temporal displacement was evident. Because this latter file has no constraint over the timing of installation (i.e. a minimum of 6 and maximum of 18 months captured before and after installation), these results suggest that the temporal displacement may be short-lived.

Tactical displacement

Moving to tactical displacement, point of entry (front, side, rear, other and unknown) was identified for each burglary and the Kruskal–Wallis ANOVA test conducted to ascertain any significant pre-/post-gating differences. Although the cross-tabulation shown in Table 4 is suggestive, there were no significant differences, either here or in a chi-square test comparing rear entry with an aggregate of all other entry points.

Beyond this, the modus operandi details (roughly 300 characters of text) accompanying each burglary case provided additional, high-quality information to establish whether this had changed after installation. As mentioned previously, one might expect offenders to change their tactics from forced entry to subterfuge. However, 10 pre-gating burglaries involved

Table 4 Cross-tabulation of point of entry pre/post installation

	Point of entry					
	Front	*Rear*	*Side*	*Other*	*Unknown*	*Total*
Before	26 (29.2%)	53 (60.1%)	5 (6.1%)	1 (1.1%)	4 (4.5%)	89
After	15 (48.4%)	15 (48.4%)	0	0	1 (3.2%)	31
Total	41	68	5	1	5	120

$\chi^2 = 5.16$; $p = .271$

[9] Notably, a cross-tabulation of month by time of day reveals no 'peaks' of occurrence except for night-time in March (11 burglaries, with the next highest count being 6 for January, September and October nights and May evenings). Moreover, chi-square results ($\chi^2 = 38.83$, $p = .23$) indicate no significant relationship between the time of day and the month in which a burglary occurred. These suggest, for the current data, no seasonal impact (e.g. increased night-time burglaries around the summer solstice) on the time of day at which the burglary occurred.

[10] The same pre-/post-installation comparison was run for this group as for the 120-case group to further assess whether the effect held over time.

this and only 6 post-gating. Thus, there appears to be no tactical displacement resulting from alley-gate installation.

Spatial displacement

We used a GIS programme ('MapInfo', version 7.8) to assess spatial displacement and diffusion by digitally mapping alley-gate locations in Oldham. This was possible by merging the above crime/alley-gate files with a street ordnance survey database (Address Point) providing geographical coordinates for each address. As with Bowers et al. (2004), these areas were digitally ring-fenced to form the action zone. Separate buffer zones were then placed around the alley-gated area. These buffers radiate out in concentric circles at a predetermined distance and are used to measure possible displacement. A control zone is then selected. Once the alley-gate locations had been digitally mapped, concentric 'buffers' were mapped (see Figure 1) at distances of 200 metres, resulting in 10 'buffers' in total. The distribution of the gates and buffers was such that it encapsulated most of the borough. This created a problem in selecting the control zone owing to the limited area remaining.

We thus decided to use the outer concentric buffer zones as graduated control zones. For the buffer zone of 0–200 metres, the buffer zone

Figure 1 Oldham borough and concentric alley-gate buffers.

of 200–400 metres becomes the control zone. Likewise, the buffer zones of 0–200 metres and 200–400 metres are combined to yield a 400 metre buffer zone and the zones of 400–600 and 600–800 metres are merged to become the control zone, up to a buffer of 1000 metres (with a commensurate 1000 metre control zone). Such an approach permits control sites roughly equivalent to the action sites and buffer zones that do not overlap with them (or other buffers) because the GIS protocols preclude it.[11] The comparison zones remain within the Oldham borough, controlling for possible variation between Basic Command Units (BCUs).[12] The weighted displacement quotient (WDQ) is then calculated based on these values and used to assess the presence of displacement or of diffusion of benefits (Bowers and Johnson 2003).[13] The WDQs for these graduated concentric zones are reported in Table 5.

Table 5 Weighted displacement quotient components (burglaries per 1000 households) and results

	Buffer displacement measure	*Success measure*	*WDQ*	*Interpretation*
200 metres	0.01	–0.03	–0.29	Displacement; smaller than AZ effect
400 metres	–0.17	–0.20	0.84	DOB; smaller than AZ effect
600 metres	–0.28	–0.32	0.88	DOB; smaller than AZ effect
800 metres	–0.28	–0.39	0.71	DOB; smaller than AZ effect
1000 metres	–0.25	–0.40	0.61	DOB; smaller than AZ effect

DOB = diffusion of benefits; AZ = action zone

[11] Notably, these buffers do not overlap but are merged into one another. There is no risk of double-counting because, where a buffer zone would capture another alley-gate site, the mapping protocols account for that site and make a new 0–200 metre buffer around it. As a consequence, the buffers are not neat concentric circles (see Figure 1); rather they appear as concentric curved shapes, covering all the sites.

[12] BCUs are geographical subunits of administration into which British police forces are divided.

[13] The formula for this is:

$$\text{WDQ} = [(B_{t1}/C_{t1}) - (B_{t0}/C_{t0})] \;/\; [(A_{t1}/C_{t1}) - (A_{t0}/C_{t0})]$$

where A represents the action (or alley-gated) zone, B the buffer zone and C the control zone. Notably, there is also a time element, with $t0$ denoting a pre-installation measure and $t1$ denoting a post-installation measure. An increase in crime in the buffer zone is evidence of displacement, whereas a decrease indicates a diffusion of benefits.

Interpretation of the WDQ is relatively straightforward, with positive numbers indicating diffusion effects and negative ones displacement (Bowers and Johnson 2003). Moreover, the bigger the WDQ, the larger its effect on the surrounding area. Values larger than 1 show the effect size to be greater in the buffer than in the action zone, whereas values smaller than 1 show the reverse. The current results suggest that alley-gating has largely positive effects on the surrounding areas. Only the 200 metre buffer and control zones yield a negative WDQ. However, this number is small, indicating that, although displacement does occur, it does not outweigh the direct, action zone effects. For all other zone gradations, the WDQ is positive but less than 1, indicating that alley-gates produce some diffusion of benefits that are less than the action zone effects.

Focus group

To explore any secondary effects, a structured focus group comprising residents of a gated area was conducted. Anecdotally, it has been suggested that residents in alley-gated areas have increased pride in their newly protected space. For example, after installation, residents make improvements to the previously neglected alleyway area, treating it as an extension of their property (Johnson and Loxley 2001). Others report reductions in low-level crime and disorder as well as enhanced community cohesion. The focus group is intended to capture these and other resident perceptions. Of particular interest were the few areas that had no burglaries before gating but did afterwards. The focus group was conducted with residents living within one such scheme, with no reported burglaries before gating but five after gating.[14] This scheme has a park at one end and, historically, a chip shop at the other, making the alleyway a heavily used thoroughfare before gating.

The Oldham Community Safety Unit helped identify this area and the local Police Community Support Officers made initial contact with community members.[15] Nine residents, living in close proximity and protected by the same alley-gate, took part.[16] The focus group was held on a weekday evening at a community centre near the scheme. At the outset, participants

[14] Four of these were to dwellings and resulted in loss, while the fifth was an attempted shed burglary. All four dwellings were entered via the front: one through an insecure door, another involved the offender distracting the tenant and the remaining two were by forcing the front door. These occurrences suggest some point-of-entry displacement at this location.

[15] This means of contact may have biased the pool of participants.

[16] This scheme covers 81 properties, giving a roughly 10 percent participation rate in the focus group. Roughly one-third of participants were female and there was an even split between those aged 40–55 and those aged 56–70. Further demographic information on participants cannot be provided without compromising their anonymity.

were advised of its purpose, that it would be audio-recorded and transcribed but that all information used would be sanitized to protect anonymity. Each participant signed a declaration of informed consent but the group were *not* told that burglary had increased (from 0 to 5) in their scheme after installation.

Findings from the focus group

This scheme was chosen because it showed an increase in burglaries after gate installation. Thus, it was surprising to find that participants not only felt that installation improved the environment, but also felt that burglary had been reduced:

> Participant H: 'I was robbed three times, [but] since we've had those gates we've not been robbed once.'
>
> Participant C: '[before gating] he had his shed knocked over twice or three times? Now it doesn't happen.'
>
> Participant A: '[before gating] we had at least 5 [burglaries] ... since the alley-gates have gone up, as far as I am aware – and I run the Home Watch – we've not had a burglary … there has been a massive, massive reduction. I would say a good 90 percent.'

These statements are particularly interesting given that no burglaries were reported prior to gate installation.

Residents also saw a marked improvement in other spheres. One participant described how, prior to the gates, the alleyway was used to evade police:

> Participant A: 'when crimes were being committed … when there's a chase on; before the alley-gates were put up the kids could dump the car, scarper through the alleys and get into the park.'

Likewise, before gating, people used the alleyway as a shortcut to a local park and chip shop, also congregating there to drink alcohol and engage in antisocial behaviour:

> Participant B: 'They used it as a cut through for the park as well, especially on a Friday or Saturday, and after drinking they'd go up the alleyway, go to the chippy … and then, on the way back down they'd do whatever ... I had fencing kicked in … they kicked it in.'

These excerpts give a rather bleak picture of the pre-gating alleyway. Consistent with the signal crime perspective (Innes 2004), residents expressed concern about youths hanging around, litter, petty damage and general nuisance behaviour. However, this description changes markedly

after installation. Residents report an improved quality of life and feeling more secure:

> Participant B: 'Then fortunately the gates went up … you do feel a bit safer. My [partner] does a lot more [feel safer].'
>
> Participant D: 'I've taken it for granted that it's got better. Because my life has [got] better … We're not having the problems that we've had in the past.'

Moreover, the alleyway is no longer used to evade the police:

> Participant A: 'it's helped the police as well. They can't get away now… The police can close down the bottom half of [street name] in minutes.'

Clearly, these residents perceive alley-gates to have reduced both crime and antisocial behaviour, even though this is not the reality for police-recorded burglary. Potential explanations for this discrepancy abound. There may be confusion on the part of the participants in regard to either crime type (e.g. mistaking burglary and robbery – as indicated in one statement) or time frame. Perhaps the pre-gate crimes referred to were not reported whereas the installation motivated residents to report crimes that they would not have otherwise. In hindsight, the facilitator could have probed deeper to assess whether these explanations account for the sharp contrast between respondent perception and police-recorded 'reality'.

Yet, despite this generally positive view, residents also described problems. One was the failure of some residents to secure the gates:

> Participant A: 'Some people … [are] leaving them open… Well there is no point in having 'em as it defeats the object if they leave 'em open.'

One contributing factor seems to be that the gates are not self-closing:

> Participant F: 'you have to physically close them, lock them. And they're forever open and, you're forever closing them. … It's an ongoing thing. We close the gates. They go out the back and leave them open.'

In addition, the gates are not easy to lock.

> Participant B: 'you have to lock them with the key, you have to put a bar across and then you turn the key two and then three times ... it's like a mortise. You turn it once, it comes out so far, you turn it again, and to fully lock it you turn it three times.'

Despite this, scheme members took responsibility to solve the problem on their own:

> Participant C: 'If I see a gate open I just go and lock it right away and I don't care who's in there or who's out.'
>
> Participant B: 'I look after the one [gate] at the top near me … if it's not locked I'll walk down and lock it.'

Problems arising from rubbish collection yielded a similar dynamic. Specifically, refuse collectors do not collect the rubbish wheelie bins from within the gates:

> Participant E: 'they don't open the gates for the bins … If the bins are inside the gate and it's not been opened, they leave the bins. They won't come in.'

Because of this, residents have to place the bins outside the gates on collection day. This creates problems for bin return and leads to bins being lost:

> Participant E: 'They're there for about three days aren't they them bins? … We [also] have had quite a few wheelie bins stolen.'

However, as with the gate-securing issue, scheme members took the initiative to provide a 'quick fix'.

> Participant A: '[Participant C] puts the bins out and puts them in on a Thursday morning.'

Likewise, key regulation was not initially well controlled for this scheme, resulting in non-residents having access to the alleyway:

> Participant A: 'people were coming and going in rented properties and the keys were … getting lost. The wrong type of individuals were handing over the keys and that was the problem … there was a young man … having keys cut and giving them to his friends… As far as we know he had five keys cut.'

Yet again, a scheme member stepped in to address the problem, arranging with Oldham Council for the locks to be changed and maintaining an informal accounting of the keys:

> Participant A: '[Participant E] manages the keys … [and] we had the new lock put in.'

Residents also described how some youths tried to overcome the scheme by jumping over the gates.

> Participant C: 'Sometimes I look there and I watch these two lads climb over the gates and they come around the back … the gates in [another scheme] are that [indicating] high. They can't climb over them. But our gates are easy.'

But further probing on the issue revealed:

> Participant B: 'I greased them [the gates]. When they first went up, they used to jump over them beside my house. So I went out early one morning with a bucket of grease. And they soon came to it, have a look at it and walk off.'

In short, the focus group identified a number of gate-related problems that scheme members took upon themselves to remedy, demonstrating their investment in the scheme's success. The gates seem to be a positive 'control signal' of authorities' efforts to address crime and disorder, which, in turn,

enhances 'residents' willingness to engage in *the interventions that are a key element in collective efficacy*' (Bottoms 2006: 269).

However, the discussion also revealed issues beyond scheme members' control. For example, beyond reporting it, residents can do nothing to fix damage to the gates. According to one resident, a broken lock was not fixed quickly:

> Participant A: 'the lock was busted for a long time … about 15 months?'

This suggests that gate maintenance is, at times, not highly prioritized.

The discussion also revealed the deleterious effect one awkward resident can have on scheme effectiveness and community cohesion. Specifically, one particularly aggressive tenant (not present) would not close the gates and made threats when approached:

> Participant A: 'He has actually threatened members of the residents' association and Home Watch group. He has been approached. He likes a party in the summer and instead of putting the cans in the bin he throws them over the wall into the street. He's also been warned by at least three police officers. … he threatened to stab [Participant E]. He also threatened to stab the people from number [W]. It's all been recorded; it's all been logged … that doesn't stop someone sticking a knife in them though.'

In this case, scheme residents made concerted efforts to resolve the situation but all attempts, including police intervention, made little difference. The sense of fear reflected amongst participants demonstrates both gating's dependency on the cooperation of all scheme residents and the fragile nature of community cohesion.

Discussion

In Oldham, 'alley-gating' significantly reduced burglaries in schemes protected by them and in the immediately surrounding area. Analyses uncovered no significant tactical displacement. Spatial displacement was minimal and limited to 200 metres. Temporal displacement by time of day was found, but this appears to be short-lived and could be addressed via temporary increased police patrols in the mornings and evenings during the months following installation.

However, as described previously, Oldham alley-gate sites do not coincide with burglary hotspots and were previously limited by lack of consent and time-limited funding. That 'gating orders' are now possible accentuates the need for tangible guidance for determining which locations receive alley-gates and when. Crime analysis and GIS could direct new installations to burglary hotspots. Although both funding and consent (or

gating orders) must still be secured, such an approach could reduce burglary incidence even further.

Understanding the unique context of the environment where an alley-gate is placed would also be useful. For example, at the focus group site, facilities at one end of the alley were nodes for youth, making the alley-way a favourite path, particularly when they did not wish to be observed. As such, youths regularly scaled the gates. Awareness of such spatial characteristics can be taken into account at the installation phase. Stepped-up patrols at such nodes might coincide with gate installation so as to reinforce the change. Thus, not only would the path be cut off, but the node would simultaneously be less attractive, thereby removing a key motivation for gate-scaling or circumvention.

The focus group also revealed some problems associated with gating. An offender may reside within a gated area or have access via association with a resident. Gates are left insecure. A difficult resident may refuse to cooperate. Likewise, issues external to the scheme (e.g. proximity to a node) can result in efforts to circumvent the gates (e.g. scaling them). At the focus group site, this occurred before greasing but not after, suggesting that the gates were initially insufficient incentive to induce motivated persons to modify their paths.

Individual scheme members with a desire to ensure the success of the scheme took personal responsibility for addressing problems. Clearly, without this informal regulation, gate effectiveness would be dramatically reduced. Thus, alley-gates are multidimensional, requiring both structural and social change for optimal effectiveness. Although motivated scheme members alone are insufficient to prevent all problems, the focus group shows that considerably more problems would occur without them. Yet solutions could instead involve structural modification or formal intervention. Self-locking, spring-shut gates would help. Taller gates would inhibit people from scaling them. Providing the refuse-collection contractors with keys and establishing formal procedures to collect inside the gates would address the bins issue. Housing providers could assist with problematic residents. Scheme maintenance and adherence provisions could be included within occupancy contracts, making failure to comply grounds for eviction. This approach, termed 'third-party policing', has proved successful in other jurisdictions (Buerger and Mazerolle 1998). Such changes would alleviate residents' compulsion to undertake questionable 'fixes' (e.g. greasing the gates) and reduce the effort needed to maintain the gates. This latter point is particularly salient for burglary hotspots, where alley-gates might prove most beneficial, because they often occur in areas most likely to have low community cohesion (Jackson et al. 2007). These findings highlight the importance of maintaining regular post-installation contact with scheme

members to monitor gate functioning and learn how its effectiveness might be improved. To accomplish this on a regular basis, local Police Community Support Officers[17] might become 'gate liaisons' for residents, reporting problems and proposals for modification.

However, although the focus group provided valuable information, importantly it is not representative of all alley-gate schemes or their residents. The fact that a police representative asked participants to discuss the alley-gates may have yielded an unrepresentative group, potentially producing the 'us/them' mentality uncovered in relation to non-attending residents. Thus, future research might make a special effort to elicit the views of those less likely to participate in such meetings. Moreover, multiple focus groups would permit identification of recurrent themes and differences between groups, ensuring that the findings are not unique to the current group.

Similarly, the generalizability of the quantitative results is limited. Although the results are consistent with previous research, alley-gates installed in other locations may have a different impact. Moreover, police-recorded data have limitations: their quality cannot be controlled and they are reliant on (1) a crime being reported and (2) police recording it successfully.[18] Ideally, at the planning and installation stage, independent baseline data on a variety of related issues (e.g. crime, community perceptions) would have been collected with evaluation in mind. Continuing through installation and beyond, such data collection would have permitted a more robust assessment. This did not happen because most crime prevention efforts do not take evaluation into consideration (Ekblom and Pease 1995). Future alley-gating endeavours, however, might incorporate evaluation into implementation plans at the initial stages so as to gain a more refined understanding of the intervention's impact.

Beyond this, the only crime captured by the quantitative analyses is burglary. Although alley-gating is reported to reduce antisocial behaviour, youth disorder and fear of crime, these have not been examined beyond the focus group. Finally, the current design cannot control for the influence of other possible crime prevention approaches such as localized installation of CCTV or security lighting. Future research should also endeavour to take such potential influences into account.

Despite its limitations, the study yields findings that are relevant to the residents, the police, the council and other key partners. It provides a useful insight into the functioning of a popular 'structural' intervention. Although

[17] These are non-sworn officers who have limited policing powers and are used primarily for patrol and community interaction purposes.

[18] Although varied recording practice is a common problem with police-recorded data, the April 2002 National Crime Recording Standard should minimize this possible bias (Simmons et al. 2003).

work remains to be done, we hope that the current research is the first of many endeavours in that vein.

Acknowledgements

We wish to thank Justice Tankebe, Ken Pease, the Editor and the anonymous reviewer for their helpful suggestions.

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